

Natural Soda LLC 2017 Project Status Report & Annual Plan of Development January 2018

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1.0 Introduction and Project Summary

This 2017 Project Status Report and Annual Plan of Development is submitted to fulfill the requirements of BLM sodium leases, COC-00118326, COC-00118327, COC-0119986, and COC-37474 as stated in Federal Regulations 43 CFR, Subpart 3591 and 3592 and project Record of Decision dated January 20, 1987. This report is also submitted to the Colorado Division of Reclamation Mining and Safety (DRMS) to meet the requirements for an Annual Report per State permit number M-1983-194, and in part to meet the requirements contained in the EPA UIC Class III Area Permits: CO30358-00000 and CO32169-00000.

This report summarizes NS 2017 process operations, production activities, reclamation status, geotechnical and environmental monitoring results, as well as, the status of all surface facilities and wells. Proposed operations for 2018 will be described in this report, including drilling the 17H production well pair, 17H-SSMW well, 12H-IR production well, and the 2018 Plugging and Abandonment Program.

2.0 Description of Project Area

2.1 Location and Regional Setting

The four NS sodium leases are located in the Piceance Creek Basin in Rio Blanco County in northwestern Colorado (Figures 1 and 2). The sodium leases are located primarily between the Yellow Creek and Piceance Creek drainages, approximately 41 miles from Meeker, Colorado and 53 miles from Rifle, Colorado. The climate is semi-arid with annual precipitation averaging 12-14 inches. Precipitation generally occurs as snow from November to March and as rain during the remainder of the year. The vegetation is predominantly pinyon pine, sagebrush, Utah juniper, western wheatgrass, and needle-and-thread grass. The total area contained within the four sodium leases is 8,379 acres more or less. The principle area of operation is located in and around Section 26, T1S, R98W, 6th Principal Meridian. Figure 1 shows the NS leases and regional map setting. Figure 2 shows sodium leases within the Piceance Creek Basin. Figure 3 and Figure 4 show the NS well locations, and proposed well locations.

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Figure 1: Natural Soda LLC Vicinity Map





Figure 2: Sodium Leases Map



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Figure 3: Plant and Well Location Map, Section 26 Detail.



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Figure 4: Plant and Well Location Map, Expanded View.







2.2 Leasehold Status

The original four sodium leases were renewed by the BLM, in 2011 for a period of ten years. Annual rental and royalty payments have been submitted to the Mineral Management Service. The NS leases comprise approximately 8,379 acres.

3.0 Project Status

3.1 2017 Project Activities (Confidential) (See Figure 3 & Figure 4: Plant and Well Location Maps)

In 2017 NS produced 235,839 tons of sodium bicarbonate. This product was produced from the 8H, 10H, 11H, 12H, 13H, 14H, 15H, 16H, and DVPW mining intervals. Routine boil outs were performed in 2017. Various short shut-downs were required for routine maintenance, equipment repair and/or replacement.

3.1.1 Items of Significance (Confidential)

- The 16H production well pair was drilled and completed in July 2017, and began producing in September 2017.
- The 11H-I and 11H-R production wells were P&A'd in May/June of 2017 due to the retirement of the 11H mining interval.
- The 7H-1V, 7H-2I, and 7H-IR production wells were P&A'd in May 2017 due to the retirement of the 7H mining interval.
- Two (2) antiquated monitor wells were P&A'd in May 2017. These were the MMC-IRI-2 and MMC-IRI-10 wells.
- The BG-8(DS-4) B-Groove monitor well was plugged and abandoned per BLM approval in May 2017.
- NS performed cleanouts and re-equipped three groundwater monitor wells in 2017. The three groundwater monitoring wells were the MMC-IRI-1, MMC-IRI-4, and the MMC-IRI-8. In August 2017, following cleanout operations these wells had nitrogen lift sample pumps installed.
- The 90-1 groundwater monitoring well was equipped with a nitrogen lift pump in February 2017.

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Cavity

DVPW1

0

1,258



87,139

328,521

Total

tons

	Table 1: Cavity Production in Tons (Confidential)										
	Cavity	Cavity	Cavity	Cavity	Cavity	Cavity	Cavity	Cavity			
Tons in 2017	#8H	#10H	#11H	#12H	#13H	#14H	#15H	#16H			
	24,231	26,183	5,562	142	13,857	68,944	74,484	22,434			

136,033

3.1.2 Cavity Production (Confidential)

331,832

3.1.3 2017 Monthly Production Tons Summary (Confidential)

Month	Beginning Inventory	Production	Sales	Ending Inventory
January	2,524	21,795	20,292	4,027
February	4,027	20,308	18,842	5,493
March	5,493	25,038	26,489	4,042
April	4,042	17,474	19,336	2,180
Мау	2,180	15,096	16,927	349
June	349	17,842	17,014	1,177
July	1,177	18,742	18,727	1,192
August	1,192	18,018	17,194	2,016
September	2,016	18,312	17,289	3,039
October	3,039	22,263	21,696	3,606
November	3,606	20,172	19,454	4,324
December	4,324	20,779	20,071	5,032
TOTALS		235,839	233,331	

Table 2: Monthly Production Summary in Tons (Confidential)

96,943

203,938

86,368

22,434

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3.1.4 Regulatory Review (Confidential)

NS submitted routine Sundry Notices, monthly, quarterly, and annual reports to the appropriate agencies. The following summarizes other regulatory related activities:

BLM

- Right of Ways (ROWs) were granted for the 2017 RDP access roads in January 2017.
- NS submitted to the BLM, a Notice of Intent to plug and abandon the BG-8(DS-4) monitor well in February 2017. BLM approval was granted in March 2017. All required documentation of the final plug and abandonment activities was submitted to the BLM in June 2017.
- A Notice of Intent was submitted to the BLM to plug and abandon five production wells; 7H-2I, 7H-IR, 7H-1V, 11H-I, and the 11H-R in March 2017. BLM approval was granted in March 2017. All required documentation of the final plug and abandonment activities was submitted to BLM in June 2017.
- NS submitted to the BLM a Notice of Intent to plug and abandon four groundwater monitor wells; MMC-IRI-2, MMC-IRI-5, MMC-IRI-9, and MMC-IRI-10 in March 2017. BLM approval was granted in April 2017. Only the MMC-IRI-2, and MMC-IRI-10 were plugged and abandoned in 2017, all required documentation post P&A operations was submitted to the BLM in June 2017.
- Construction and location modifications for the 16H production well pair were submitted in March 2017. BLM approval was granted in April 2017. Following construction of the 16H production well pair, all required documentation was submitted to the BLM in August 2017.
- In May 2017 NS requested approval of the EPA to convert the 8H-R recovery production well to the 8H-IR injection/recovery well.
- NS submitted APD documents for the 12H-IR, 403H-I, and 403H-R proposed production wells in May 2017. Approval for these wells was granted by the BLM October of 2017.
- NS notified the BLM of the DRMS Permit M-1983-194 Amendment 04 application changes and review in June 2017.
- June 2017, NS submitted a Notice of Intent to drill and complete the 17H-SSMW well and construction of an access road to the location in summer of 2018 to the BLM. Approval for this well was granted in October of 2017.
- Undesirable Event reports (minor leaks of brine water on the ground surface) were submitted to the BLM in April and December 2017.



EPA

- The EPA approved the Major Area Permit Modification (UIC Permit C030358-00000) in July of 2017.
- NS updated the EPA Financial Assurance in June 2017. This update included the proposed completion of the 8H-R, 12H-IR, and 403H-I wells, plus the plug and abandonment in 2017 of the 7H-2I and 11H-I wells. EPA agreed to the adjustments in June 2017.
- Mechanical Integrity Testing Parts I and II were performed on the 8H-RI during October and December 2017 (respectively).
- Mechanical Integrity Testing Parts I and II were performed on the 16H-I in July and November 2017 (respectively).
- Mechanical Integrity Testing Part I was performed on the 12H-I (EPA mandated, Five Year Anniversary) in January 2017. Part II will be performed following the drilling and completion of the 12H-IR in 2018.
- Final subsurface subsidence monitor well (SSMW) gamma ray and casing collar locator (GR/CCL) logs were collected from the BG-8(DS-4 10H-C) well for the retired 11H mining interval in May 2017. No subsidence was noted.
- NS conducted EPA mandated subsurface subsidence logging, in their DS-5 subsurface subsidence monitor well in April 2017. This well serves as a monitor for the 13H and 14H mining cavities. No subsidence was noted.
- NS conducted a surface subsidence monument survey in 2017, in accordance with UIC Permit C030358-00000 requirements.

Colorado Division of Reclamation and Mine Safety (DRMS)

- On April 26, 2017 the DRMS conducted an inspection of the NS plant and wellfield. No major issues were noted.
- Permit M-1983-194 Amendment 04 and fee was submitted in May 2017 to allow for the following: a permit area increase, the addition of seven new production wells, dual 16 inch production pipelines and a parking area.
- NS notified the DRMS of a modification to Amendment 04 for the construction of a new sodium bicarbonate loadout area and conveyance system to the plant facility in May 2017.
- NS notified the DRMS of the successful abandonment of the BG-8(DS-4), MMC-IRI-2, and MMC-IRI-10 groundwater monitor wells in June 2017.
- NS notified the DRMS of the successful abandonment of the 11H-I, 11H-R, 7H-2I, 7H-1R, and the 7H-1V production wells in June 2017

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 September 6, 2017 DRMS notified NS of the approval and updated reclamation cost for the revision of Amendment 04 to the mine plan. This Amendment increases the permit acreage to 12,248 acres to be consistent with areas of historic disturbance and the EPA UIC permit area. Also to allow for the construction of a new loadout area which includes; a new elevator, conveyance system, a new electrical room and a baghouse. The amendment also incorporates a total of seven new wells. Total allowed maximum disturbance remains at 260 acres.

Colorado Division of Water Resources (DWR)

• No items of significance were required between NS and DWR in 2017.

Colorado Department of Public Health & Environment (CDPHE)

- In October 2016 CDPHE issued CDPS General Permit C0G500000 for discharges from sand and gravel mining and processing, authorization to discharge under Colorado discharge permit system. The permit went into effect on January 1, 2017.
- In 2017 NS complied with all reporting requirements for storm water and environmental emissions.

Rio Blanco County (RBC)

- Temporary living quarters were approved for use for the drilling and completion of the 16H production well pair.
- In 2017 NS worked with RBC to acquire proper building permits for the addition of a storage facility and load out to the plant facility.





3.2 **Proposed 2018 Activities and Schedule (Confidential)**

3.2.1 Processing (Confidential)

NS anticipates an increase in production in 2018. Brief shut-downs for periodic boilouts and routine maintenance are also planned in 2018.

3.2.2 Well field (Confidential)

- NS anticipates limited production from the DVPW in 2018.
- The 12H-I/R Injection/Recovery well and the two 17H production wells are planned to be drilled, completed, and brought on line in 2018.
- The 17H-SSMW will be drilled and completed in 2018 as a subsurface subsidence monitor well for the 17H and 18H mining intervals per EPA requirements.
- NS anticipates conducting a 2018 Plugging and Abandonment Program. This program is planned to permit and P&A the following wells: MMC-IRI-5, MMC-IRI-8, and MMC-IRI-9.
- The 10H mining interval and associated wells, 10H-1V, 10H-I, and 10H-R will be retired in late 2018.

3.2.3 EPA Notification – 2018 Schedule of Planned Mechanical Integrity Test (MIT) (Confidential)

- Per EPA UIC Permit C030358-00000 Final Area Permit requirements the following MIT Part I and MIT Part II testing is planned for 2018.
 - 13H-I Injection Well routine 5-year anniversary MIT Part II temperature logging will be conducted prior to the anniversary date of December, 3 2018.
 - 17H-I Injection Well initial, routine MIT Part I pressure testing, and Part II temperature logging will be conducted following well completion operations in 2018 per UIC permit stipulations.
 - 12H-IR Injection/Recovery Well initial, routine MIT Part I and Part II (pressure testing and temperature logging) will be conducted during well completion operations in 2018 per UIC permit stipulations.
 - 12H-I Injection Well routine MIT Part II temperature logging will be conducted following 12H-IR well completion operations in 2018 per EPA permit stipulations.

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3.2.4 EPA Notification – 2018 Schedule of Planned SSMW Logging (GR/CCL) (Confidential)

- Per EPA UIC Permit C030358-00000 Final Area Permit requirements the following SSMW Logging (GR/CCL) is planned for 2018.
 - NS will schedule and collect baseline SSMW logs in 2018 from the planned 17H-SSMW for baseline log data to support the 17H and 18H mining intervals pursuant to UIC permit stipulations.

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4.0 2017 Project Activities

4.1 On-Site Facilities and Process Description

4.1.1 General Arrangement

Figure 5 provides an overview of the NS process flow.

4.1.2 Lab Operation / Sanitation / ISO

In 2017, activities continued in the laboratory to provide analysis for process control, quality assurance, and regulatory requirements.

- Plant operators performed process control analyses.
- Chloride levels were monitored by both operations and laboratory personnel on all USP grades to ensure USP standards were met.
- The USP test for insoluble materials was conducted on a per lot basis by laboratory personnel and a filter test for insoluble materials was conducted on the dry product, once per shift by operators.
- Pests were controlled with the use of two UV bug lights and rodent traps around the interior and exterior walls of the plant.
- GMP/ISO/Sanitation training was provided for all employees as required.
- A food safety audit for FSSC 22000 was conducted for which Natural Soda maintained GFSI certification.
- CDPHE, NSF, OMRI, Kosher, Halal, and ISO 9001 certifications were maintained.

4.1.3 Process, Utilities, Facilities

In 2017 NS did construct a new load out facility. NS did not make any other significant improvements to process, utilities or facilities. Figure 5 illustrates the general process flow.

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Figure 5: General Flow Process





4.1.4 Wells Associated With the NS Project (Confidential)

The following well-field related activities occurred in 2017: Refer to *Figure 3 & Figure 4 Plant and Well Location Map.*

- The 16H production well pair was drilled and completed in July 2017, and began producing in September 2017. Routine Mechanical Integrity Tests (MIT) Parts I & II were completed pursuant to UIC stipulations.
- The 11H-I and 11H-R production wells were P&A'd in May/June of 2017 following the retirement of the 11H mining interval.
- The 7H-1V, 7H-2I, and 7H-IR production wells were P&A'd in May 2017 due to the retirement of the 7H mining interval.
- Two (2) antiquated monitor wells were P&A'd in May 2017. These were the MMC-IRI-2 and MMC-IRI-10 wells.
- The BG-8(DS-4) B-Groove monitor well was plugged and abandoned per BLM approval in May 2017.
- NS performed investigations and remediation operations on the 12H-I well in February/March of 2017 to determine potential causes for diminished production. Due to issues found in the well, NS determined the best course of action is to drill the 12H-IR well to the west of the existing 12H cavity in 2018 to augment production. The 12H-IR will connect to the west end of the existing 12H mining interval. Once the 12H-IR is drilled and completed the 12H mining interval will continue production.
- In March 2017 it was noted that the MMC-IRI-1 had an obstruction in the well bore which disrupted sampling of water quality. In May 2017, NS removed all equipment from the wellbore and cleaned out all obstructions in the well. Following cleanout operations the well was equipped with a nitrogen lift pump in August 2017
- NS performed cleanouts and installed new sample pumps in the MMC-IRI-4 and MMC-IRI-8 groundwater monitor wells in August 2017.
- The 90-1 groundwater monitoring well was equipped with a nitrogen lift sampling pump in February 2017.

The current status of all wells associated with the NS Project is indicated in *Table 3: List and Status of Wells Associated with NS*.

4.1.5 Other Activities

Continuous water level monitoring of proximal DS aquifer monitor wells provided data for the management of active production mining interval operations. Throughout the year, injection and recovery rates were adjusted to maintain dissolution surface monitoring well water levels near target zones.

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Well Name	Initial Well Type	Current Well Status	Section	Town- ship	Range	Latitude (NAD 27)	Longitude (NAD 27)	Initial TD, (MD, ft)	Current TD, (MD, ft)	Comments
3M-TDR	Subsidence Monitoring	Subsidence Monitoring	26	1S	98W	39.928794934	108.362551397	1820	1820	D8 A June 2010
4A-5M	Hydrology/Subsidence Monitoring	Plugged and Abandoned	26	1S	98W	39.929813477	108.365383461	1830	0	P&A June 2012 Currently Operates as TDR Well
7H-1V	Vertical Recovery	Vertical Recovery	26	1S	98W	39.927715239	108.361397318	1935	1935	P&A May 2017
7H-2I	Horizontal Injection	Horizontal Injection	26	1S	98W	39.927792586	108.356508352	3600	3564	P&A May 2017
7H-1R	Horizontal Recovery	Horizontal Recovery	26	1S	98W	39.927509670	108.356465742	2260	2260	P&A May 2017
8H-I	Horizontal Injection	Horizontal- Injection	35	1S	98W	39.926494295	108.367130597	2883	2883	TVD TD=~1940'
8H-R	Horizontal Recovery	Horizontal- Recovery	35	1S	98W	39.926470000	108.366742000	2480	2480	TVD TD=~1928'
10H-I	Horizontal Injection	Horizontal	25	1S	98W	39.927895622	108.349074715	4033	4033	TVD TD=~1995'
10H-R	Horizontal Recovery	Horizontal Recovery	25	1S	98W	39.928427876	108.348902019	2840	2840	TVD TD=~2005'
10H-1V	Slant Recovery	Slant Recovery	26	1S	98W	39.928386480	108.357515700	2038	2038	TVD TD =~2000
11H-I	Horizontal Injection	Horizontal Injection	25	1S	98W	39.928589638	108.348893772	4103.0	4103	P&A June 2017
11H-R	Horizontal Recovery	Horizontal Recovery	25	1S	98W	39.929122136	108.348721121	2591.0	2591	P&A May 2017
12H-I	Horizontal-Injection	Horizontal- Injection	25	1S	98W	39.929304000	108.348621000	4189.0	4189	TVD TD=~1985'
12H-R	Horizontal-Recovery	Horizontal- Recovery	25	1S	98W	39.929598000	108.348538000	2623.0	2623	TVD TD=~2007'
13H-I	Horizontal Injection	Horizontal- Injection	25	1S	98W	39.929917590	108.348444900	4307.0	4307.0	TVD TD=~1988'
13H-R	Horizontal-Recovery	Horizontal- Recovery	25	1S	98W	39.929583170	108.348684400	2549	2549	TVD TD=~2013'
14H-I	Horizontal Injection	Horizontal- Injection	25	1S	98W	39.930529000	108.349996000	3822	3822	TVD TD=~1970'
14H-R	Horizontal Recovery	Horizontal- Recovery	25	1S	98W	39.930265288	108.349763798	2819	2819	TVD TD=~1983'
15H-I	Horizontal Injection	Horizontal- Injection	27	1S	98W	39.927281590	108.370834800	5477	5477	TVD TD=~1877'
15H-R	Horizontal Recovery	Horizontal- Recovery	34	1S	98W	39.927050806	108.370714984	2698	2698	TVD TD=~1850'
15H-SSMW	Subsurface Subsidence Monitoring	Subsurface Subsidence Monitoring	26	1S	98W	39.927297800	108.367304200	1760.5	1760.5	
16H-I	Horizontal Injection	Horizontal- Injection	34	1S	98W	39.926332533	108.371061443	5425	5425	TVD TD=~1910'
16H-R	Horizontal Recovery	Horizontal- Recovery	34	1S	98W	39.926848404	108.371348247	2451	2451	TVD TD=~1856'
89-1	Hydrology Monitoring	Hydrology Monitoring Well	26	1S	98W	39.934818008	108.359830288	1989	1570	
89-2	Hydrology Monitoring	Hydrology Monitoring Well	26	1S	98W	39.934771572	108.359655360	1409	1389	
89-3	Hydrology Monitoring	Hydrology Monitoring Well	26	1S	98W	39.934959857	108.359876003	400	390	Periodic sampling issues.
90-1	Water Supply	Hydrology Monitoring Well	26	1S	98W	39.930942569	108.362786046	1451	1451	Converted to A-Grv MW August 2015
WSW-2 (2010-26-198- 2C)	Core Hole	Water Supply	26	1S	98W	39.932913043	108.357000636	1964	1402	Cored July 2010
WSW-3	Water Supply	Water Supply	26	1S	98W	39.940837450	108.361799400	1440	1440	Drilled August 2014
WSW-4	Water Supply	Water Supply	26	1S	98W	39.940358200	108.348198508	1437	1437	Drilled August 2014
90-3	Hydrology Monitoring	Hydrology Monitoring Well	26	1S	98W	39.927659529	108.363196386	1577	1556	
90-4	Hydrology Monitoring	Hydrology Monitoring Well	26	1S	98W	39.927654857	108.363040763	1392	1371	
AG-1	Core Hole 2014-25-198-J	Hydrology Monitoring Well	25	1A	98W	39.929116963	108.348465043	2061	1487	Cemented up to groundwater monitoring well level
BG-4	Hydrology Monitoring	Hydrology Monitoring Well	26	1S	98W	39.929278506	108.356901248	1999.5	1603	
BG-5 (12H-C)	Core Hole	Hydrology Subsidence Monitoring Well	26	1S	98W	39.929138572	108.351120681	3005	1645	Cemented up to groundwater monitoring well level.
BG-6 (2010- 26-198-6C)	Core Hole	Hydrology Subsidence Monitoring Well	26	1S	98W	39.931301816	108.354997679	1978	1577	Bladder pump installed December 2010.
BG-7	Core Hole 2014-25-198-K	Hydrology Monitoring Well	25	1S	98W	39.928987896	108.432905289	1967	1593.1	Cemented up to groundwater monitoring well level.
BG-8 (DS-4, 10H-C)	Core Hole, Hydrology Subsidence Monitoring Well	Hydrology Monitoring Well	26	1S	98W	39.927761681	108.351046589	2031.6	1640.5	Previously known as DS-4, Plugged back in 2016 for B-Grv Monitoring. Sampling
97 DS2	Hydrology Monitoring	Hydrology Monitoring Well	35	1S	98W	39.926217942	108.366158755	1854	1829	Issues, P&A May 2017
DS-3	Hydrology Monitoring	Hydrology Subsidence Monitoring Well	26	1S	98W	39.929529067	108.360329121	2100	1874.5	Planned sample pump replacement in 2018
DS-5 (2010- 26-198-1C)	Core Hole	Hydrology Subsidence Monitoring Well	26	1S	98W	39.930335423	108.351403951	1973	1903	Cored June 2010.
DVPW-1	Vertical Production	Vertical Production	26	1S	98W	39.929100000	108.357500000	2904.6	2904.6	Limited Production.





Table 3: List and Status of Wells Associated with NS (continued)

Well Name	Initial Well Type	Current Well Status	Section	Town- ship	Range	Latitude (NAD 27)	Longitude (NAD 27)	Initial TD, (MD, ft)	Current TD, (MD, ft)	Comments
DS-6	Core Hole	Hydrology Monitoring Well	35	1S	98W	39.926942000	108.362195000	2962.6	1870	Cemented up to groundwater monitoring well level.
DS-7	Core Hole	Hydrology Subsidence Monitoring Well	26	1S	98W	39.932036903	108.362826421	1980	1875	Cemented up to groundwater monitoring well level.
DS-8	Core Hole 2014-26-198-I	Hydrology Monitoring Well	26	1S	98W	39.932738295	108.355594975	2000	1881.7	Cemented up to groundwater monitoring well level.
DS-9	Core Hole 2014-25-198-M	Hydrology Monitoring Well	25	1S	98W	39.927447860	108.340064803	1916.5	1842	Cemented up to groundwater monitoring well level
EX-2	Core Hole	Hydrology Monitoring Well	26	1S	98W	39.934857517	108.359996032	1980	1897	
MMC-IRI-1	Core Hole	Hydrology Monitoring Well	26	1S	98W	39.927580161	108.363115621	2981	397	Cemented up to groundwater monitoring well level.
MMC-IRI-2	Core Hole	Hydrology Monitoring Well	27	1S	98W	39.931472813	108.378642620	2904	604	P&A May 2017.
MMC-IRI-4	Core Hole	Hydrology Monitoring Well	23	1S	98W	39.942950000	108.355333333	3001	1411	Cemented up to groundwater monitoring well level.
MMC-IRI-5	Core Hole	Hydrology Monitoring Well	23	1S	98W	39.943578031	108.355623039	2983	378	Planned for P&A 2018.
MMC-IRI-6	Core Hole	Hydrology Monitoring Well	23	1S	98W	39.943733333	108.355316667	1878	1394	
MMC-IRI-7	Core Hole	Hydrology Monitoring Well	23	1S	98W	39.943516667	108.356033333	1880	1395	
MMC-IRI-8	Core Hole	Hydrology Monitoring Well	23	1S	98W	39.943450000	108.355833333	1880	489	Planned for P&A 2018
MMC-IRI-9	Core Hole	Hydrology Monitoring Well	34	1S	98W	39.920759982	108.383119038	2864	1710	Planned for P&A 2018.
MMC-IRI-10	Core Hole	Hydrology Monitoring Well	14	1S	98W	39.960169970	108.355913029	2963	1761	P&A May 2017.
MMC-IRI-11	Core Hole	Hydrology Monitoring Well	25	1S	98W	39.931608050	108.336010982	2963	1550	Cemented up to groundwater monitoring well level.
MWA-2	Hydrology Monitoring	Hydrology Monitoring Well	20	1S	98W	39.952825612	108.412403600	1200	1200	
MWB-2	Hydrology Monitoring	Hydrology Monitoring Well	20	1S	98W	39.953067253	108.412206500	1398	1398	
MWD-1	Hydrology Monitoring	Hydrology Monitoring Well	20	1S	98W	39.953094778	108.411828300	1731	1731	
MWD-2	Hydrology Monitoring	Hydrology Monitoring Well	20	1S	98W	39.952635000	108.412036900	1703	1703	
MWU-2	Hydrology Monitoring	Hydrology Monitoring Well	20	1S	98W	39.933370000	108.350210000	687	687	
O-GMW-A	Core Hole 2014-27-198-O	Hydrology Monitoring Well	27	1S	98W	39.934483259	108.383446479	1786	1294	Cemented up to groundwater monitoring well level
TH75-6A	Hydrology Monitoring	Hydrology Monitoring Well	14	1S	98W	39.964492958	108.353578053	1260	1260	
TH75-6B	Hydrology Monitoring	Hydrology Monitoring Well	14	1S	98W	39.964807700	108.353045189	1755	1755	
TH75-7A	Hydrology Monitoring	Hydrology Monitoring Well	20	1S	98W	39.952321958	108.409207410	1080	1080	
TH75-7B	Hydrology Monitoring	Hydrology Monitoring Well	20	1S	98W	39.953286260	108.409494700	1498	1498	





4.2 New Findings or Developments (Confidential)

In 2017, two older groundwater monitor wells (MMC-IRI-2 and MMC-IRI-10) were plugged and abandoned. The 7H and 11H mining intervals reached the end of their mining life (7H retired 2015, 11H retired 2017). In May/June 2017 the associated production wells for these mining intervals (11H-I, 11H-R, 7H-1V, 7H-1R, and the 7H-2I) were plugged and abandoned. The WSW-2 water supply well is currently pumping at a minimal rate. The water geochemistry of the WSW-2 is currently under review. Due to complications from the 2016 conversion from a DS monitor well to a B-Groove monitor well the BG-8(DS-4) was plugged and abandoned in 2017. In 2017, the 16H production well pair was drilled and completed to enhance NS production capabilities.

4.3 2017 Operation Results (Confidential)

Mining and production activities were continuous in 2017. The following table provides a summary of mining and process results:

2017 Month	Recovery Avg. GPM	Recovery Temp.	Assay Bicarb g/l	Assay NaCl g/l	Tons Cavity #8H	Tons Cavity #10H	Tons Cavity #11H	Tons Cavity #12H	Tons Cavity #13H	Tons Cavity #14H	Tons Cavity #15H	Tons Cavity #16H	Tons Cavity DVPW1	Monthly Total Tons
Jan-17	2,116.91	201.76	211.36	21.02	1,833.99	1,608.04	2,764.71	142.49	2,140.53	6,717.01	6,588.29		0.00	21,795.05
Feb-17	2,093.14	200.68	211.90	26.09	1,949.33	1,753.93	2,797.19	0.00	2,188.47	6,203.07	5,415.56		0.00	20,307.55
Mar-17	2,104.06	201.87	213.41	26.09	3,158.49	2,408.40	0.00	0.00	3,363.54	7,530.59	8,576.96		0.00	25,037.98
Apr-17	1,889.03	205.94	211.23	26.09	2,056.64	1,885.99	0.00	0.00	1,784.03	5,939.25	5,808.00		0.00	17,473.90
May-17	1,985.74	207.86	213.20	26.09	1,397.09	892.88	0.00	0.00	1,485.60	5,267.82	6,052.43		0.00	15,095.82
Jun-17	1,967.18	209.38	218.48	26.09	1,887.08	2,798.29	0.00	0.00	1,539.07	5,371.00	6,246.08	1	0.00	17,841.52
Jul-17	1,941.20	203.26	222.50	26.09	2,518.11	2,375.66	0.00	0.00	444.76	6,108.78	7,295.09		0.00	18,742.39
Aug-17	1,900.36	207.15	221.87	26.09	2,632.42	2,333.60	0.00	0.00	635.14	6,215.80	6,200.90		0.00	18,017.86
Sep-17	1,871.26	200.61	221.46	26.09	1,930.88	2,697.30	0.00	0.00	276.11	5,501.29	5,345.45	2,560.85	0.00	18,311.88
Oct-17	2,209.83	203.64	220.94	26.09	3,081.66	2,755.78	0.00	0.00	0.00	5,213.34	5,772.60	5,439.62	0.00	22,262.99
Nov-17	1,985.58	202.25	222.73	26.09	349.67	2,487.44	0.00	0.00	0.00	4,767.99	6,239.83	6,327.51	0.00	20,172.44
Dec-17	2,075.49	200.29	218.36	26.09	1,436.01	2,185.44	0.00	0.00	0.00	4,108.24	4,943.26	8,106.32	0.00	20,779.27
AVERAGE	2,011.65	203.72	217.29	25.67	2,019.28	2,181.89	463.49	11.87	1,154.77	5,745.35	6,207.04	5,608.57	0.00	19,653.22
TOTAL	12	1			24,231.36	26,182.73	5,561.89	142.49	13,857.24	68,944.17	74,484.45	22,434.29	0.00	235,838.63
Key to abo	ve headings:	Recovery - Assay - Tons - Temp Avg GPM -	g/L sodium bi (Total bicarbo Total monthly Temperature i	carbonate (a: onate = bicar 7 bicarbonate n degrees F, r	w rate and preg s total bicarbon bonate g/L + 1.5 production fro ecovered at the low rate during	ate) and sodiu 58 x carbonate m each cavity. pregnant lique	m chloride in g/L) or tank.	01						

Table 4: Mine and Process Data (Confidential)

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Figure 6 illustrates 2017 pregnant liquor analytical results. Figure 7 represents monthly production for 2017. NS processed and produced their sodium bicarbonate product during all twelve months of 2017. The balance between injection and recovery rates for mining intervals 8H, 10H, 11H, 12H, 13H, 14H, 15H, 16H, and the DVPW has been continuously monitored using total flow analysis and fluid level indicators (pressure transmitters) installed in existing Dissolution Surface aquifer monitoring wells located near the active mining intervals.







Figure 7: NS 2017 Production (Confidential)



4.4 Geotechnical Program

NS currently monitors two time-domain-reflectometry (TDR) subsurface-subsidence monitor wells, the 4A-5M and 3M-TDR. There has been no indication of surface or subsurface subsidence near the 4A-5M or 3M-TDR wells since installation. One of the TDR cables in the 4A-5M well is showing evidence of water infiltration. Two of the four TDR cables in 3M-TDR subsidence well were corrupted during installation, in 2003, and not operable. In addition to the monthly NS readings, the installation contractor also collects data quarterly.

4.4.1 Subsurface Subsidence Geophysical Logging

NS conducted routine, EPA mandated, subsurface subsidence logging, in their DS-5 (2010-26-198-1C) subsurface subsidence monitor well on April 25, 2017. This subsurface subsidence logging was required due to the 14H production well having reached a mining interval recovery percentage of 50%. No subsurface subsidence was observed.

NS conducted final, EPA mandated, subsurface subsidence logging, in their BG-8 (DS 4, 10H-C) subsurface subsidence monitor well (SSMW) on May 3, 2017. The BG-8 served as the SSMW for the NS 10H an 11H mining intervals. The logging was performed prior to the P&A operations of the 11H production well pair P&A as required by EPA, and the P&A of the BG-8 (DS-4, 10H-C) well. No subsurface subsidence was evident.

4.4.2 Surface Subsidence Monitoring

In June 2017 a new 17H SSM was installed above the proposed 17H lateral wellbore. This installation was performed in compliance with requirements contained within the EPA Underground Injection Control (UIC) Permit # CO30358-00000.

A surface subsidence survey of 15 SSM locations was conducted in June and August of 2017. Two SSM's, the CP6 and CP8 were not surveyed in 2017. The mining intervals that are located below these two surface monuments have been retired for over five years and do not require continued surveying. A review of the 2017 survey indicated no surface subsidence. Results of the 2017 SSM Survey are shown in Table 5 below.

4.5 Water Well Pumpage

In 2017, approximately 106.9 million gallons of water was pumped from water supply wells WSW-2, WSW-3, and WSW-4 with an average of 203.3 gpm. The total pumpage from WSW-2 was 14.8 million gallons, WSW-3 was 40.7 million gallons, and the total pumpage from WSW-4 was 51.4 million gallons.

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SSM Monument	Elevation (ft. AMSL) Initial Monument Installation	Elevation (ft. AMSL) 2017 Survey	Change in Elevation (ft.)
CP Center SSM	6658.99	6658.98	-0.01
CP North SSM	6639.21	6639.18	-0.03
CP East SSM	6669.52	6669.38	-0.14
CP South SSM	6683.84	6683.83	-0.01
CP West SSM	6669.77	6669.63	-0.14
CP 7 SSM	6706.52	6706.47	-0.05
CP 10 SSM	6687.41	6687.39	-0.02
CP 10H SSM	6712.95	6712.78	-0.17
CP 11H SSM	6705.81	6705.62	-0.19
CP 12H SSM	6695.86	6695.68	-0.18
CP 13H SSM	6684.47	6684.25	-0.22
CP 14H SSM	6675.2	6675.04	-0.16
CP 15H SSM	6702.35	6702.39	0.04
CP 16H SSM	6713.03	6713.11	0.08
CP 17H SSM	6719.06	6719.06	N/A

Table 5: Surface Subsidence Monument (SSM) Elevation Monitoring



5.0 Environmental Monitoring and Protection

5.1 Hydrology Monitoring

5.1.1 Introduction

NS's hydrology monitoring program concentrates on ground water, as there are no perennial streams or springs located on or near NS's sodium leases. The USGS stream gauging station-monitoring program is conducted, with NS support, to provide regional surface stream flow data on Yellow and Piceance Creeks.

The hydrology-monitoring plan is designed to determine impacts of NS's solution mining operations on underground sources of drinking water, as designated by the US EPA.

Refer to Figure 3 and Figure 4 for the locations of existing monitor wells. Groundwater analytical results are presented in Appendix A.

5.1.2 Stream Gauging Stations

NS continues to contract with the USGS to monitor surface water for water quality and quantity. Monitoring was performed upstream and downstream relative to the mining operations and with respect to Yellow Creek and Piceance Creek at four existing stations with extensive historical data. Historical stream gauging data is reported in this document and discharge data is complete through the 2017 water year (October 2016 – September 2017).

The USGS surface water data are available to the public from the USGS web site at http://co.water.usgs.gov. Tables 6 and 7 summarize key 2017 water year data for surface water near the NS site.

A review of USGS stream water quality data indicated no significant change in stream water quality during 2017. The 2017 data showed a decrease in precipitation amounts at the NS location compared to 2016. The water year data discharge (cfs) in this area indicated a similar decrease in average stream discharge levels from 2016 to 2017. The 2017 discharge (cfs) data is similar to discharge levels measured during the 2012 through 2015 years. The 2017 Specific Conductance data from USGS for all four stations was within the range values for the period of record. The 2017 water temperature values were within the range of historic data. No effect on stream water quality was noted from any of the NS operations.

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10010	iellip (v.)	2017 WY	<u>Max</u>	22.7	20.2	13.2	18.3				
Tom		P of R	Max	25.0	28.0	29.0	35.0				
		2017 WY	<u>Min</u>	1,390	1,540	1,160	1,080		iver	ptember).	
nductance	μS/cm @ 25°C)	P of R	<u>Min</u>	352	822	271	457	ear Rangely	ear White R	October-Se	
Specific conductance	(µS/cm (2017 WY	<u>Max</u>	2,120	3,550	1,280	3,600	6242 Corral Gulch near Rangely	6255 Yellow Creek near White River	**WY = Water Year (October-September).	
		P of R	<u>Max</u>	2,380	6,080	3,000	5,790	6242 Cor	6255 Yell	M = ΥW**	
Total	Dischargo	2017 2017	ac ft/yr	8,476	11,221	398	1238				
Averade Total	Avelage Lutal Discharge	P of R	ac ft/yr	19,052	23,689	1,137	1,782			ŗ.	×.
	Discharge	2017 WY**	<u>cfs</u>	11.70	15.50	0.55	1.71	Gulch	/er	llection of data	de annual flov
	Discharge	P of R*	<u>cfs</u>	26.30 (52 yrs)	32.70 (52 yrs)	1.57 (43 yrs)	2.46 (52 yrs)	6200 Piceance Creek below Ryan Gulch	6222 Piceance Creek at White River	* P of R = Period of Record for collection of data.	cfs = cubic feet per second, average annual flow
	Ctation	OTATION		<u>6200</u>	6222	6242	<u>6255</u>	6200 Piceance	6222 Piceance	* P of R = Peric	cfs = cubic feet

Table 6: Historical Comparison with 2017 Water Year Data

Table 7: Yellow and Piceance Creek Discharge Data up to 2017 Water Year

Station 6220 6242 6255	2004 6.9 6.8 1.8	2005 13.4 22.2 0.8 1.6	2006 14.3 16.6 0.2 1.1			Project 2009 16.3 20.8 0.4 1.0 Specific C	Project Data Comparison scharge for Water Years in cfs 2009 2010 2011 2 2009 2010 2011 2 2009 2010 2011 2 2008 17.6 41.7 36.2 20.8 17.6 41.7 36.2 0.4 0.3 1.1 1.1 1.0 0.9 1.3 1.3 1.0 0.9 1.3 1.3	parison Years in (2011 36.2 41.7 1.1 1.3 Ce (μS/cn	rison rs in cfs 011 2012 36.2 17.5 41.7 19.2 1.1 0.3 1.3 1.2 (µS/cm @ 25°C)		2014 10.7 13.0 0.5 1.2	2015 15.9 19.7 0.5	2016 17.0 1.9 1.3	2017 11.7 15.5 0.6 1.7
Station 6200 6203	2004 1,860 3 720	2005 1,720 3 940	2006 1,800 3 910	2007 1,700 3,500	2008 1,460 1 950	2009 1,620 3 130	2,020 4 800	2011 1,460 2 290	2012 1,610 5 350	2013 1,930 5,100	2,040 3,190	2015 1,770 2 790	2 <u>016</u> 1,840 2 020	2017 2,120 3.550
<u>8242</u> 6242 6255	3,720 1,520 4,000	3,940 1,520 4,250	3,910 1,500 4,320	3,300 1,280 4,230	1,350 3,830	4,050	4,000 1,460 4,260	2,230 1,280 4,130	1,480 4,170	0,100 1,430 4,720	3, 180 1,400 4,530	4,070	2,020 1,170 4,520	3,600
* P of R = 6200 Pice	Period of F ance Creel	* P of R = Period of Record for collection 6200 Piceance Creek below Ryan Gulch	* P of R = Period of Record for collection of data 6200 Piceance Creek below Ryan Gulch	data.	M**	Y = Water \	/Y = Water Year (October-September) 	er-Septemb		6242 Corral Gulch near Rangely	bic feet per h near Rar	· second, av ıgely	cfs = cubic feet per second, average annual flow rral Gulch near Rangely	al flow.
6222 Pice	ance Creel	6222 Piceance Creek at White River	River						6255 Y	6255 Yellow Creek near White River	near White	e River		



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5.1.3 Monitoring Wells

Per regulatory requirements, dedicated groundwater monitoring wells have been constructed to monitor four water-bearing intervals identified as the Perched, A-Groove, B-Groove, and the Dissolution Surface Aquifers. These aquifers are monitored at several locations across the solution mining area: up and down-gradient, remote down-gradient, and toward the east near the southeast portion of Section 26. Refer to Figure 3 and Figure 4 for well locations.

Baseline and current ground water monitoring data have been obtained from 1991 through present. Within NS's lease boundaries, there are three aquifers defined by US EPA as underground sources of drinking water (USDW): the Perched, A-Groove and B-Groove Aquifers. The Dissolution Surface Aquifer has been exempted as an underground source of drinking water in the NS lease and permit areas.

The Perched Aquifer is characteristically lower in total dissolved solids (TDS), conductivity, fluoride, SAR (sodium absorption ratio) and moderate to higher in sulfate and pH. The A-Groove and B-Groove Aquifers are similar in water quality with moderate TDS, conductivity, SAR, but higher fluoride. However, the B-Groove Aquifer generally has slightly higher levels of TDS, conductivity, SAR, and fluoride. The Dissolution Surface Aquifer is characterized by very high TDS and conductivity (30,000 to >100,000 ppm), higher SAR, magnesium, potassium, moderate pH, and a generally higher fluoride.

In 2017 the results of groundwater monitoring were analyzed for potential anomalies in order to prevent or mitigate potential negative impacts to the USDW's.

Appendix A contains detailed sampling results for all ground water monitoring wells.

5.1.4 Process Ponds

The process ponds at the NS site have a secondary liner, which collect and direct any condensation or leakage to the leak detection tube for removal. Weekly collection and removal of leachate continued in 2017. Process pond information is reported on a monthly basis.

5.1.5 Potentiometric Surface Maps (Confidential)

Using groundwater level elevations from NS groundwater monitoring wells and other NS wells, the potentiometric surface has been plotted for the A-Groove and B-Groove Aquifers. Maps representing the potentiometric surface for the A-Groove and B-Groove Aquifers have been included with this report in Appendix C (Confidential).

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6.0 Land Disturbance and Reclamation

6.1 Summary of 2017 Disturbance

NS did not create any new disturbed acreage in 2017. The total disturbed acreage reported in 2016 was 94.88 acres. In 2017, it was determined that a more accurate accounting of the NS land disturbance would be 97.29 acres. The 1A-4HI, 1A-5HR, and the 3A-5V pads are adjacent to one another and were reported in 2016 as having a combined acreage of 2.30 acres. Following a review in February 2017, it was determined that a more accurate representation of the disturbance for these three pads would be a combined total of 4.71 acres. This 2.41 acre increase accounts for the difference between the 2016 (94.88 acres) and 2017 (97.29 acres) reported totals. The P&A of the BG-8(DS-4) well in May 2017 and subsequent reclamation activities on the pad changed the status of the pad disturbance from interim reclaimed to reclaimed. Table 8 lists the disturbed acreage as of December 2017.

Process Area:	Acres:
Plant Site Disturbed	26.84
Plant Site Interim Reclaimed	4.46
Well Field:	
Roads Disturbed	2.45
Well Pads Disturbed	21.26
Roads/Misc. Interim Reclaimed	5.33
Well Pads Interim Reclaimed	11.71
Well Pad Reclaimed	25.24
Total Disturbance:	<u>97.29</u>

Table 8: Disturbed Acreage





6.2 Regulatory Compliance

6.2.1 Regulatory Activity

In 2017, all required reports were submitted in a timely manner. Required forms were submitted to the appropriate agencies regarding all activities pertaining to the new wells drilled & associated plugging and abandonment operations.

6.3 Reclamation Activity

6.3.1 Regrading & Scarification

Regrading and scarification activities occurred in 2017 at the BG-8(DS-4) location, 7H Pad, 7H-1V Pad, MMC-IRI-2 location, and the MMC-IRI-10 location to support final reclamation.

6.3.2 Seeding & Weed Control

The majority of seeding activity in 2017 focused on the areas disturbed following the 2017 P&A projects on the 7H and 7H-1V pads, BG-8(DS-4), MMC-IRI-2, and MMC-IRI-10 locations. These areas were reseeded with the BLM Approved final seed mix. In 2017 NS applied weed control measures to the DS-6, DS-7, IRI-3, PW-1, PW-2, MU-1, WSW-4, BG-5, DS-5, BG-6, IRI-1, WSW-2 well locations. Additionally weed control was also conducted on the 15H-17H and 15H-SSMW pads. The annual vegetation monitoring continued in 2017 for the areas of study that are currently in final reclamation status. This report, *The 2017 Vegetation Monitoring Reclamation Status Report*, prepared by Mr. Rusty Roberts can found in Appendix D.

6.3.3 Reclamation Fencing

Repair and maintenance was performed, as necessary, on existing fences in 2017 as needed. Fencing is utilized to keep livestock and wildlife out of the reclaimed areas.

6.3.4 Precipitation

Perennial vegetation is an indicator of long-term precipitation, the "normal" precipitation for the NS site is 12-14 inches for the calendar year. The distribution of precipitation is important for proper reclamation. The total precipitation for 2017 was 16.63 inches; the ten year average (2008 - 2017) is 11.61 inches. Table 9 provides a list of the annual precipitation from 2008 - 2017 for the NS mine site:

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Month/Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	AVG
Jan	0.76	0.65	0.40	0.18	0.18	0.25	0.98	0.47	1.62	1.89	0.71
Feb	1.90	0.50	0.20	0.15	1.15	0.30	0.35	0.39	1.34	1.52	0.74
Mar	1.80	0.60	1.45	1.25	0.30	0.50	0.28	0.82	1.76	1.01	0.99
Apr	1.25	0.75	0.25	1.25	0.40	1.35	0.63	1.71	5.18	1.11	1.25
Мау	0.45	1.25	0.05	0.95	0.14	1.05	1.66	4.36	2.06	2.17	1.15
Jun	1.05	1.25	0.95	0.00	0.06	0.35	0.01	0.51	0.53	0.47	0.57
Jul	0.20	0.30	0.45	0.23	0.43	1.40	1.34	1.78	1.07	3.36	0.92
Aug	0.30	1.70	0.40	0.00	0.86	0.26	3.17	1.44	2.78	0.85	1.26
Sep	0.50	0.80	0.70	0.13	0.36	2.89	2.14	0.32	2.19	1.55	1.28
Oct	0.43	0.50	1.08	0.87	0.58	1.35	1.09	1.38	1.89	1.62	1.17
Nov	0.30	0.30	0.35	0.05	0.28	1.30	0.80	0.70	1.56	0.64	0.85
Dec	0.70	0.70	1.67	0.32	0.83	0.17	1.00	0.10	1.04	0.44	0.93
Annual Totals	9.64	9.30	7.95	5.38	5.57	11.17	13.44	14.02	23.02	16.63	11.82 11.61

 Table 9: Annual Precipitation in inches (10 Year)

6.3.5 Vegetation Monitoring Results

See Appendix D for 2016 Vegetation Monitoring Reclamation Status Report prepared by Rusty Roberts.

6.4 Deer Road Kill Study

Per the monitoring requirement from the BLM, NS compiled deer road kill data throughout 2017 for vehicles traveling to and from the NS site. Three deer of unknown sex were reported as struck and killed in 2017. One other deer of unknown sex was reported as being struck by a vehicle, but the deer ran off.

6.5 Raptor Survey

The 2016 raptor survey sufficed for the 2017 well field development activities and was reported in the 2017 annual report. A raptor survey will be conducted in the spring of 2018 per BLM requirements for 2018 and 2019 well field development activities.

6.6 Other Observations

Elk, deer, coyotes, rabbits, bobcat, and fox were noted in and around the well-field throughout the year.

DAUB & ASSOCIATES, INC.



6.7 Waste Disposal

Common domestic solid waste was collected in containers and periodically transported to the Rio Blanco County landfill. Sewage from the plant was directed to a septic system with a leach drain field. Process water, including plant wash down, blow down from the boilers, and precipitation runoff, was directed to the process pond. A pump in the process pond allows NS to recycle the water to the barren system. The wastewater pond contains, and evaporates, water from the cooling tower blow down, water softener brine, and boiler ditch. Table 10 indicates hazardous waste that was generated and collected at the NS facilities. Hazardous waste was collected, contained safely, stored separately from day to day waste, and then disposed of properly by Clean Harbors, Inc., a certified hazardous waste handling/disposal company.

Date Shipped	# of Containers	Total Quantity	Contents / Waste	EPA Waste Code
	1	2515 Lbs.	CRANK CASE OIL	N/A
3/9/2017	1	280 Lbs.	Arsenic and Heavy Metal Waste	D004, D005, D006, D007, D008, D011, D038, F005, U196
	1	413 Lbs.	2,2-dibromo-3-nitrilopropionamide	N/A
4/13/2017	3	49 Lbs.	Biocide	D002
4/13/2017	3	51 Lbs.	Biocide	D002
	3	46 Lbs.	Biocide	D002
5/11/2017	1	126 Lbs.	Biocide	D002
0/14/0017	2	493 Lbs.	Arsenic and Heavy Metal Waste	D004, D005, D006, D007, D008, D011, D038, F005, U196
8/14/2017	2	488 Lbs.	Arsenic and Heavy Metal Waste	D004, D005, D006, D007, D008, D011, D038, F005, U196
	3	40 Lbs.	Caustic Commercial Descalent NaOH	D002
	3	40 Lbs.	Caustic Commercial Descalent NaOH	D002
9/15/2017	3	40 Lbs.	Caustic Commercial Descalent NaOH	D002
	1	500 Lbs.	CI/Br Biocide	D002
	1	55 Lbs.	Unused Commercial Biocide Br/Cl	D002
11/9/2017	1	321 Lbs.	2,2-dibromo-3-nitrilopropionamide	N/A
	Rej	oorted from Na	atural Soda by Mr. Gerry Deschaine 1/23/20	018

Table 10: Hazardous Waste Disposal

source: Clean Harbors manifests

DAUB & ASSOCIATES, INC. The American Constant States





Natural Soda LLC

Appendix A: Groundwater Analytical Results

DAUB & ASSOCIATES, INC. A CONTRACTOR DE CONTRACTOR



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples		- / /				
Bicarbonate as CaCO3	163	404.00	8/28/13	66.00	9/14/92	205.79	mg/l
Carbonate as CaCO3	163	138.00	12/5/12	3.00	6/26/90	28.45	mg/l
Total Alkalinity as	163	524.00	8/28/13	66.00	9/14/92	226.13	mg/l
Bromide	25	0.60	7/6/00	0.05	10/22/89	0.19	mg/l
Cation-Anion Balance	161	15.70	6/14/17	-13.00	12/16/15	0.29	%
Sum of Anions	140	12.60	8/28/13	5.10	6/14/17	7.56	meq/l
Sum of Cations	141	11.80	8/28/13	5.78	9/14/92	7.54	meq/l
Chemical Oxygen	19	300.00	9/23/10	10.00	10/22/89	51.82	mg/l
Chloride	163	75.30	8/28/13	4.00	9/27/90	15.51	mg/l
Conductivity, Lab	159	1,210.00	8/28/13	534.00	8/6/92	726.07	µmhos
Fluoride	163	18.00	7/31/91	0.02	4/19/01	0.49	mg/l
Hardness as CaCO3	162	113.00	4/11/06	27.00	3/30/90	80.53	mg/l
Nitrate as N, dissolved	27	0.76	7/24/02	0.02	12/5/12	0.14	mg/l
Nitrate/Nitrite as N,	27	0.85	7/24/02	0.03	7/18/95	0.15	mg/l
Nitrite as N, dissolved	27	0.10	6/26/91	0.01	6/25/07	0.04	mg/l
Nitrogen, Ammonia	24	13.10	9/23/10	0.11	7/12/96	1.52	mg/l
Nitrogen, Organic	24	13.40	6/26/91	0.10	7/18/95	1.93	mg/l
Nitrogen, Total Kjeldahl	24	25.40	9/23/10	0.20	7/21/94	3.20	mg/l
pH, lab	162	11.50	12/19/91	6.60	9/14/92	8.55	units
Phosphate, total	22	155.00	6/25/07	0.03	7/2/98	11.12	mg/l
Phosphorus, total	24	2.33	9/23/10	0.01	6/26/91	0.23	mg/l
SAR in Water	152	15.92	3/30/90	4.82	9/14/92	6.82	none
Sulfate	163	296.00	3/30/90	1.00	12/12/08	126.42	mg/l
Sulfide	21	4.50	9/23/10	0.03	7/2/98	0.49	mg/l
Total Dissolved Solids	163	659.00	8/28/13	329.00	6/14/17	441.25	mg/l
Conductivity, Field	180	16,000.00	7/1/90	500.00	2/24/93	778.75	µmhos
pH, Field	181	10.23	7/19/09	7.30	9/27/90	8.67	units
Temperature (°C), Field	91	21.10	7/19/09	6.40	12/1/90	11.98	(°C)
Water Level, Field	77	341.00	9/1/11	316.20	10/31/17	324.60	Ft.
		011100	0, 1, 11	010120		02 1100	
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples					J	
Aluminum, dissolved	26	2.12	7/27/01	U	7/7/99	0.42	mg/l
Arsenic, dissolved	25	0.04	10/22/89	0.00	12/5/12	0.01	mg/l
Barium, dissolved	25	0.69	3/30/90	0.00	10/22/89	0.06	mg/l
Beryllium, dissolved	25	0.00	6/26/91	U	6/26/91	0.00	mg/l
Boron, dissolved	163	0.43	8/28/13	0.02	4/24/91	0.06	mg/l
Cadmium, dissolved	25	0.00	9/13/95	U U	9/13/95	0.00	mg/l
Calcium, dissolved	163	17.00	9/27/90	4.50	6/25/07	11.76	mg/l
Chromium, dissolved	26	0.01	6/26/91	4.00 U	6/26/91	0.01	mg/l
Copper, dissolved	20	0.20	12/5/12	U	3/30/90	0.06	mg/l
Iron, dissolved	20	4.17	9/27/90	U	7/7/99	0.00	mg/l
Lead, dissolved	25	0.06	8/19/09	U	6/26/91	0.04	mg/l
Lithium, dissolved	25	0.05	3/30/90	U	6/26/91	0.04	mg/l
Magnesium, dissolved	163	18.40	7/24/02	3.00	3/30/90	12.41	mg/l
Magnesium, dissolved Manganese, dissolved	25	0.14	9/27/90	<u>3.00</u> U	7/7/99	0.03	
Manganese, dissolved Mercury, dissolved	25 24	0.14	9/27/90 10/22/89	U U	6/26/91		mg/l
Molybdenum, dissolved	24 25	0.00	6/26/90	U	7/12/96	0.00	mg/l mg/l
Nickel, dissolved	25		10/22/89		10/22/89		
		0.02		UU		0.02	mg/l
Potassium, dissolved	163	10.00	1/31/91		4/28/95	1.19	mg/l
Selenium, dissolved	25	0.00	3/30/90	U	9/27/90	0.00	mg/l

Table 11: 89-3 Annual Perched Aquifer

DAUB & ASSOCIATES, INC. 2013 BAR CONTRACTOR

163

163

163

25

25

Silica, dissolved

Sodium, dissolved

Strontium, dissolved

Vanadium, dissolved

Zinc, dissolved

mg/l

mg/l

mg/l

mg/l

mg/l

15.74

134.05

0.81

U

0.05

7/27/01

8/28/13

4/11/06

12/5/12

3/30/90

4.80

96.00

0.17

U

U

1/21/92

9/14/92

3/30/90

12/5/12

10/22/89

33.20

236.00

1.09

U

0.35



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	ingn	Date	LOW	Date	Average	Units
Bicarbonate as CaCO3	107	548.00	1/8/15	0.00	8/1/90	168.41	mg/l
Carbonate as CaCO3	107	300.00	10/25/90	0.00	8/30/08	121.19	mg/l
Total Alkalinity as	107	900.00	8/1/90	156.00	10/13/92	307.07	mg/l
Bromide	26	1.60	7/21/93	0.06	6/16/11	0.29	mg/l
Cation-Anion Balance	104	63.90	8/14/17	-16.00	3/13/03	1.11	
Sum of Anions	97	24.97	8/13/90	5.30	6/15/14	9.11	meq/l
Sum of Cations	97	50.00	8/14/17	5.70	6/14/11	9.71	meq/l
Chemical Oxygen	19	300.00	9/21/10	10.00	8/16/94	46.25	mg/l
Chloride	107	400.00	4/24/91	14.00	12/15/92	51.12	mg/l
Conductivity, Lab	107	2,630.00	1/20/92	467.00	3/23/05	885.11	µmhos
Fluoride	104	24.00	9/2/98	1.70	4/20/92	6.50	mg/l
Hardness as CaCO3	107	553.00	8/1/90	2.00	6/23/10	39.36	mg/l
Nitrate as N, dissolved	26	2.77	6/26/02	0.02	6/28/06	0.38	mg/l
Nitrate/Nitrite as N,	26	2.79	6/26/02	0.02	6/28/06	0.35	mg/l
Nitrite as N, dissolved	26	0.13	8/16/96	0.00	8/1/90	0.05	mg/l
Nitrogen, Ammonia	25	2.57	7/31/91	0.25	6/9/99	0.76	mg/l
Nitrogen, Organic	25	3.90	7/21/92	0.20	6/16/11	1.03	mg/l
Nitrogen, Total Kjeldahl	25	5.90	7/31/91	0.50	6/16/11	1.83	mg/l
pH, lab	104	11.30	7/31/91	6.60	8/30/08	9.56	units
Phosphate, total	24	155.00	6/28/06	0.00	8/13/90	18.35	mg/l
Phosphorus, total	25	1.41	9/21/10	0.03	7/31/91	0.26	mg/l
SAR in Water	99	76.00	8/14/17	5.76	8/1/90	22.08	none
Sulfate	107	243.00	12/15/92	41.00	3/9/11	80.54	mg/l
Sulfide	24	4.00	6/13/01	0.03	6/2/98	1.08	mg/l
Total Dissolved Solids	105	1,644.00	8/1/90	335.00	6/15/14	608.13	mg/l
Conductivity, Field	165	3,500.00	8/1/90	643.00	11/27/12	1,187.16	µmhos
pH, Field	164	12.80	12/1/90	6.04	8/30/08	10.31	units
Temperature (°C), Field	104	20.10	5/16/07	6.50	12/12/08	12.25	(°C)
	104					12.20	
Water Level Field							Ft
Water Level, Field	79	387.19	8/14/17	308.80	6/20/17	380.55	Ft.
	79	387.19	8/14/17	308.80	6/20/17	380.55	
Parameters	79 No. of						Ft. Units
Parameters Metals	79 No. of Samples	387.19 High	8/14/17 Date	308.80	6/20/17 Date	380.55 Average	Units
Parameters Metals Aluminum, dissolved	79 No. of Samples 26	387.19 High 11.10	8/14/17 Date 8/16/96	308.80 Low 0.06	6/20/17 Date 7/29/09	380.55 Average 3.18	Units mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved	79 No. of Samples 26 26	387.19 High 11.10 0.01	8/14/17 Date 8/16/96 7/31/91	308.80 Low 0.06 U	6/20/17 Date 7/29/09 11/27/12	380.55 Average 3.18 0.00	Units mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	79 No. of <u>Samples</u> 26 26 26	387.19 High 11.10 0.01 0.29	8/14/17 Date 8/16/96 7/31/91 8/14/95	308.80 Low 0.06 U 0.01	6/20/17 Date 7/29/09 11/27/12 11/27/12	380.55 Average 3.18 0.00 0.08	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	79 No. of 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95	308.80 Low 0.06 U 0.01 U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95	380.55 Average 3.18 0.00 0.08 0.00	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	79 No. of 26 26 26 26 26 26 26 107	387.19 High 11.10 0.01 0.29 0.00 0.39	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15	308.80 Low 0.06 U 0.01 U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90	380.55 Average 3.18 0.00 0.08 0.00 0.16	Units mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	79 No. of 26 26 26 26 26 107 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93	308.80 Low 0.06 U 0.01 U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	79 No. of Samples 26 26 26 26 26 107 26 107	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90	308.80 Low 0.06 U 0.01 U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 8/1/90	308.80 Low 0.06 U 0.01 U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26 107 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 8/1/90 6/14/00	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26 107 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.02 0.20 14.10	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 8/1/90 6/14/00 7/21/93	308.80 Low 0.06 U 0.01 U U U U U U U U U 0.02	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 8/1/90 6/14/00 7/21/93 7/21/93	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 8/1/90 6/14/00 7/21/93 7/21/93 8/13/90	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20	8/14/17 Date 8/16/96 7/31/91 8/14/95 1/8/15 7/21/93 8/1/90 8/1/90 6/14/00 7/21/93 7/21/93 8/13/90 3/14/00	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 9/26/01	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20 0.37	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 7/21/93 8/13/90 3/14/00 8/14/95	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 9/26/01 8/30/08	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	79 No. of Samples 26 26 26 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20 0.37 0.00	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 7/21/93 8/13/90 3/14/00 8/14/95 8/14/95	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 9/26/01 8/30/08 8/14/95	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	79 No. of Samples 26 26 26 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20 0.37 0.00 0.10	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 7/21/93 8/13/90 3/14/00 8/14/95 8/14/95 8/1/90	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 9/26/01 8/30/08 8/14/95 6/16/97	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00 0.00 0.04	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Beryllium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	79 No. of Samples 26 26 26 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20 0.37 0.00 0.37 0.00 0.10 0.02	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 7/21/93 8/13/90 3/14/00 8/13/90 3/14/00 8/14/95 8/14/95 8/14/95 8/1/90 10/25/90	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 9/26/01 8/30/08 8/14/95 6/16/97 8/16/96	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00 0.00 0.04 0.01	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	79 No. of Samples 26 26 26 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20 0.37 0.00 0.37 0.00 0.10 0.02 146.00	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 8/13/90 3/14/00 8/13/90 3/14/00 8/14/95 8/14/95 8/14/95 8/14/95 8/1/90 10/25/90 8/1/90	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 8/14/95 6/16/97 8/16/96 4/24/91	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00 0.00 0.04 0.01 8.02	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Beryllium, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	79 No. of Samples 26 26 26 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20 0.37 0.00 0.37 0.00 0.10 0.02 146.00 0.00	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 8/13/90 3/14/00 8/13/90 3/14/00 8/14/95 8/15 8/14/95	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 8/14/95 6/16/97 8/16/96 4/124/91 8/13/90	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00 0.00 0.04 0.01 8.02 0.00	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Beryllium, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	79 No. of Samples 26 26 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.20 14.10 0.19 31.20 0.37 0.00 0.10 0.10 0.10 0.37 0.00 0.10 0.02	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 8/13/90 3/14/00 8/14/95 8/14/95 8/14/95 8/1/90 10/25/90 8/1/91 8/14/95	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 8/14/95 6/16/97 8/30/08 8/14/95 6/16/97 8/16/96 4/24/91 8/13/90 8/1/90	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00 0.00 0.04 0.01 8.02 0.00 32.35	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Beryllium, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	79 No. of Samples 26 26 26 26 107 26 107 26 107 26 107 26 107 26 107 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.02 0.20 14.10 0.10 0.19 31.20 0.37 0.00 0.10 0.37 0.00 0.10 0.10 0.10 0.10 0.10 0.21 146.00 0.00 99.30 1,110.00	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 7/21/93 8/13/90 3/14/00 8/14/95 8/14/95 8/14/95 8/14/95 8/14/17	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 8/14/95 6/16/97 8/30/08 8/14/95 6/16/97 8/16/96 4/24/91 8/13/90 8/1/90 6/14/11	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00 0.00 0.04 0.01 8.02 0.00 32.35 203.43	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Beryllium, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	79 No. of Samples 26 26 26 107 26 26 26 26 26 26 26 26 26 26 26 26 26	387.19 High 11.10 0.01 0.29 0.00 0.39 0.03 223.00 0.20 14.10 0.19 31.20 0.37 0.00 0.10 0.10 0.10 0.37 0.00 0.10 0.02	8/14/17 Date 8/16/96 7/31/91 8/14/95 8/14/95 1/8/15 7/21/93 8/1/90 6/14/00 7/21/93 7/21/93 8/13/90 3/14/00 8/14/95 8/14/95 8/14/95 8/1/90 10/25/90 8/1/91 8/14/95	308.80 Low 0.06 U 0.01 U U U U U U U U U U U U U	6/20/17 Date 7/29/09 11/27/12 11/27/12 8/14/95 10/25/90 7/21/93 6/23/10 8/16/96 8/1/90 7/21/92 6/16/97 8/30/08 8/14/95 6/16/97 8/30/08 8/14/95 6/16/97 8/16/96 4/24/91 8/13/90 8/1/90	380.55 Average 3.18 0.00 0.08 0.00 0.16 0.03 12.22 0.01 0.04 3.20 0.07 0.05 2.55 0.09 0.00 0.00 0.04 0.01 8.02 0.00 32.35	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 12: IRI-1 Annual Perched Aquifer

DAUB & ASSOCIATES, INC. ATT. 20 A Marin NY 77 910159



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	_					
Bicarbonate as CaCO3	57	327.00	6/30/09	2.00	12/18/91	182.94	mg/l
Carbonate as CaCO3	57	284.00	12/18/91	0.00	6/14/08	77.90	mg/l
Total Alkalinity as	57	406.00	3/25/92	181.00	5/29/02	252.61	mg/l
Bromide	27	1.00	8/22/91	0.00	8/12/92	0.21	mg/l
Cation-Anion Balance	54	17.30	6/14/08	-10.20	5/26/04	0.98	%
Sum of Anions	49	15.77	6/16/92	8.43	12/19/95	9.93	meq/l
Sum of Cations	49	15.25	6/16/92	7.90	5/26/04	10.19	meq/l
Chemical Oxygen	24	181.00	11/2/15	0.00	5/29/02	55.29	mg/l
Chloride	57	420.00	6/16/92	9.00	12/19/95	21.58	mg/l
Conductivity, Lab	57	1,500.00	6/16/92	795.00	8/12/91	977.81	µmhos
Fluoride	57	0.90	9/16/91	0.00	6/30/95	0.29	mg/l
Hardness as CaCO3	57	182.00	6/14/08	1.00	12/20/93	33.19	mg/l
Nitrate as N, dissolved	28	12.50	5/29/02	0.00	8/12/92	1.03	mg/l
Nitrate/Nitrite as N,	28	12.50	5/29/02	0.00	8/12/92	0.91	mg/l
Nitrite as N, dissolved	28	0.06	9/14/92	0.00	8/12/92	0.02	mg/l
Nitrogen, Ammonia	28	0.87	6/23/94	0.08	5/21/07	0.30	mg/l
Nitrogen, Organic	28	80.00	5/15/98	0.00	8/12/92	5.47	mg/l
Nitrogen, Total Kjeldahl	28	80.00	5/15/98	0.50	8/12/91	5.20	mg/l
pH, lab	57	11.90	6/28/93	2.40	6/16/92	9.22	units
Phosphate, total	26	155.00	7/29/09	0.06	5/29/02	6.59	mg/l
Phosphorus, total	28	1.87	6/18/96	0.02	5/29/02	0.20	mg/l
SAR in Water	48	90.44	1/20/94	7.50	6/30/09	23.02	none
Sulfate	57	290.00	3/25/92	148.00	3/22/96	202.96	mg/l
Sulfide	27	1.20	8/24/17	0.05	6/14/08	0.30	mg/l
Total Dissolved Solids	56	1,090	6/16/92	504	4/21/94	632	mg/l
Conductivity, Field	69	9,880	5/21/07	715	12/19/95	1,188	µmhos
pH, Field	68	12.00	8/12/92	6.33	6/14/08	9.94	units
Temperature (°C), Field	29	17	6/14/08	9.70	11/1/02	12	(°C)
Water Level, Field	50	248.06	6/15/10	238.40	12/15/15	241.26	Ft.
	00	210100	0,10,10	200110	12/10/10	211120	
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples					Jeres and a second s	
Aluminum, dissolved	27	10.00	8/22/92	U	5/29/03	1.28	mg/l
Arsenic, dissolved	27	0.01	6/18/96	Ŭ	5/26/04	0.00	mg/l
Barium, dissolved	27	0.27	5/21/07	0.01	5/26/04	0.00	mg/l
Beryllium, dissolved	27	0.01	8/22/92	U	8/22/92	0.04	mg/l
Boron, dissolved	57	0.11	11/21/05	0.02	8/22/97	0.07	mg/l
Cadmium, dissolved	27	0.01	8/22/92	<u> </u>	3/22/16	0.00	mg/l
Calcium, dissolved	57	63.60	6/14/08	1.00	6/16/92	7.04	mg/l
Chromium, dissolved	27	0.02	8/22/92	U 1.00	6/23/94	0.02	mg/l
	27	0.02	8/12/91	U	6/23/94	0.02	mg/l

Table 13: IRI-5 Annual Perched Aquifer

T di di lictor 5	110.01	ingn	Duit	LOW	Duit	Average	Onits
Metals	Samples						
Aluminum, dissolved	27	10.00	8/22/92	U	5/29/03	1.28	mg/l
Arsenic, dissolved	27	0.01	6/18/96	U	5/26/04	0.00	mg/l
Barium, dissolved	27	0.27	5/21/07	0.01	5/26/04	0.04	mg/l
Beryllium, dissolved	27	0.01	8/22/92	U	8/22/92	0.01	mg/l
Boron, dissolved	57	0.11	11/21/05	0.02	8/22/97	0.07	mg/l
Cadmium, dissolved	27	0.01	8/22/92	U	3/22/16	0.00	mg/l
Calcium, dissolved	57	63.60	6/14/08	1.00	6/16/92	7.04	mg/l
Chromium, dissolved	27	0.02	8/22/92	U	6/23/94	0.02	mg/l
Copper, dissolved	27	0.02	8/12/91	U	6/23/94	0.02	mg/l
Iron, dissolved	27	7.30	8/22/92	U	5/26/04	0.72	mg/l
Lead, dissolved	27	0.12	3/22/16	U	8/12/91	0.05	mg/l
Lithium, dissolved	27	0.06	10/3/12	U	5/26/04	0.03	mg/l
Magnesium, dissolved	57	9.10	6/30/09	U	6/30/95	4.47	mg/l
Manganese, dissolved	31	0.07	8/22/92	U	8/22/97	0.02	mg/l
Mercury, dissolved	27	0.00	8/22/92	U	8/22/92	0.00	mg/l
Molybdenum, dissolved	27	0.03	6/14/08	U	6/18/96	0.02	mg/l
Nickel, dissolved	27	0.04	7/29/09	U	8/22/92	0.03	mg/l
Potassium, dissolved	56	22.00	12/18/91	1.00	3/22/16	7.81	mg/l
Selenium, dissolved	27	0.00	8/12/91	U	8/12/91	0.00	mg/l
Silica, dissolved	56	74.00	8/22/92	10.90	3/21/17	18.70	mg/l
Sodium, dissolved	56	336.00	6/16/92	166.00	5/26/04	209.71	mg/l
Strontium, dissolved	56	1.30	6/30/09	0.06	6/16/92	0.48	mg/l
Vanadium, dissolved	27	0.01	8/22/92	U	8/22/92	0.01	mg/l
Zinc, dissolved	27	0.08	8/22/92	U	6/23/94	0.03	mg/l

DAUB & ASSOCIATES, INC. 2013 BANG TO THE DRING TO AN


Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	mgn	Dute	Low	Dute	Arciuge	onito
Bicarbonate as CaCO3	171	903.00	12/12/08	41.00	1/30/97	514.92	mg/l
Carbonate as CaCO3	171	566.00	1/30/97	8.00	11/28/90	89.71	mg/l
Total Alkalinity as	171	926.00	12/12/08	160.00	10/25/90	602.80	mg/l
Bromide	27		6/26/90		7/1/97		
	162	3.00		0.05		0.44	mg/l
Cation-Anion Balance		63.40	4/14/05	-28.80	8/2/06	1.04	%
Sum of Anions	145	20.10	12/12/08	11.66	11/28/90	14.12	meq/l
Sum of Cations	145	67.50	4/14/05	7.80	8/2/06	14.56	meq/l
Chemical Oxygen	24	220.00	9/22/10	10.00	8/2/06	80.23	mg/l
Chloride	170	118.00	10/22/89	2.00	4/24/91	19.96	mg/l
Conductivity, Lab	168	1,760.00	12/12/08	1,000.00	5/20/93	1,257.73	umhos
Fluoride	171	30.00	12/19/91	1.90	6/26/91	21.38	mg/l
Hardness as CaCO3	165	77.00	12/12/08	0.40	10/25/90	8.45	mg/l
Nitrate as N, dissolved	28	5.76	8/10/08	0.02	7/18/95	0.53	mg/l
Nitrate/Nitrite as N,	28	6.26	8/10/08	0.02	7/18/95	0.56	mg/l
Nitrite as N, dissolved	28	0.50	8/10/08	0.01	3/30/90	0.13	mg/l
Nitrogen, Ammonia	26	3.77	8/10/08	0.54	6/15/92	1.30	mg/l
Nitrogen, Organic	26	14.60	9/27/90	0.10	6/15/92	4.37	mg/l
Nitrogen, Total Kjeldahl	26	15.40	9/27/90	0.60	6/15/92	5.49	mg/l
pH, lab	167	9.70	12/20/94	8.00	7/18/95	8.92	units
Phosphate, total	22	155.00	6/25/07	0.06	7/2/98	10.79	mg/l
Phosphorus, total	27	0.46	6/26/90	0.01	8/17/93	0.08	mg/l
SAR in Water	128	345.00	4/14/05	9.71	10/25/90	59.59	none
Sulfate	171	445.00	6/26/90	3.47	12/10/14	41.36	mg/l
Sulfide	23	2.40	7/24/02	0.02	7/15/04	0.45	mg/l
Total Dissolved Solids	171	2,040.00	4/14/05	494.00	10/25/90	790.06	mg/l
Conductivity, Field	217	1,980.00	12/12/08	620.00	3/16/94	1,221.73	µmhos
pH, Field	217	10.00	8/22/91	6.80	3/10/94	9.11	units
Temperature (°C), Field	97	17.40	7/1/02	9.20	1/30/06	12.20	(°C)
	83						
Water Level, Field	03	545.20	6/25/14	463.95	4/1/03	492.74	Ft.
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals		підп	Dale	LOW	Dale	Average	Units
Aluminum, dissolved	Samples	0.70	10/22/89	0.03	7/1/97	0.12	ma/l
	26						mg/l
Arsenic, dissolved	26	0.04	6/26/91	0.00	6/15/92	0.01	mg/l
Barium, dissolved	26	0.23	7/15/04	0.01	8/2/06	0.04	mg/l
Beryllium, dissolved	26	0.01	6/26/90	U	6/26/90	0.01	mg/l
Boron, dissolved	164	1.48	4/14/05	0.19	8/2/06	0.37	mg/l
Cadmium, dissolved	26	0.01	6/26/90	U	6/26/90	0.01	mg/l
						1.46	mg/l
Calcium, dissolved	163	15.70	12/12/08	U	4/27/04		
Calcium, dissolved Chromium, dissolved	163 26	0.07	7/30/03	U	6/26/90	0.04	mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved	163 26 26	0.07 0.01	7/30/03 6/26/90	U U	6/26/90 6/26/90	0.04 0.01	
Calcium, dissolved Chromium, dissolved	163 26	0.07	7/30/03	U U U	6/26/90	0.04	mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved	163 26 26	0.07 0.01	7/30/03 6/26/90	U U	6/26/90 6/26/90	0.04 0.01	mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	163 26 26 26	0.07 0.01 0.80	7/30/03 6/26/90 10/22/89	U U U	6/26/90 6/26/90 7/18/95	0.04 0.01 0.13	mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	163 26 26 26 26 26	0.07 0.01 0.80 0.05	7/30/03 6/26/90 10/22/89 10/22/89 7/15/04	U U U U	6/26/90 6/26/90 7/18/95 6/26/90 6/26/90	0.04 0.01 0.13 0.03	mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	163 26 26 26 26 26 26 163	0.07 0.01 0.80 0.05 0.13 9.10	7/30/03 6/26/90 10/22/89 10/22/89		6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04	0.04 0.01 0.13 0.03 0.05 1.18	mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	163 26 26 26 26 26 26 163 25	0.07 0.01 0.80 0.05 0.13 9.10 0.14	7/30/03 6/26/90 10/22/89 10/22/89 7/15/04 12/12/08 7/30/03		6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90	0.04 0.01 0.13 0.03 0.05 1.18 0.06	mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	163 26 26 26 26 26 163 25 25 26	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00	7/30/03 6/26/90 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92		6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90	0.04 0.01 0.13 0.03 0.05 1.18 0.06 0.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	163 26 26 26 26 26 163 25 25 26 26	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00 0.13	7/30/03 6/26/90 10/22/89 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92 10/22/89		6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90 7/12/96	0.04 0.01 0.13 0.03 0.05 1.18 0.06 0.00 0.05	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	163 26 26 26 26 26 163 25 25 26 26 26 26	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00 0.13 0.52	7/30/03 6/26/90 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92 10/22/89 7/30/03		6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90 7/12/96 10/22/89	0.04 0.01 0.13 0.03 0.05 1.18 0.06 0.00 0.05 0.19	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	163 26 26 26 26 26 163 25 26 26 26 26 26 164	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00 0.13 0.52 7.00	7/30/03 6/26/90 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92 10/22/89 7/30/03 10/22/89		6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90 7/12/96 10/22/89 8/2/06	0.04 0.01 0.13 0.05 1.18 0.06 0.00 0.05 0.19 1.33	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	163 26 26	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00 0.13 0.52 7.00 0.01	7/30/03 6/26/90 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92 10/22/89 7/30/03 10/22/89 9/27/90	U U U U U U U U U U U U U U U U U	6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90 7/12/96 10/22/89 8/2/06 6/26/90	0.04 0.01 0.13 0.03 0.05 1.18 0.06 0.00 0.05 0.19 1.33 0.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved Selenium, dissolved	163 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 164 26 164	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00 0.13 0.52 7.00 0.01 27.70	7/30/03 6/26/90 10/22/89 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92 10/22/89 7/30/03 10/22/89 9/27/90 1/9/01	U U U U U U U U U U U U 4.70	6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90 7/12/96 10/22/89 8/2/06 6/26/90 8/2/06	0.04 0.01 0.13 0.03 0.05 1.18 0.06 0.00 0.05 0.19 1.33 0.00 13.07	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved Selenium, dissolved Silica, dissolved	163 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 164 26 164 164	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00 0.13 0.52 7.00 0.01 27.70 1,530.00	7/30/03 6/26/90 10/22/89 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92 10/22/89 7/30/03 10/22/89 9/27/90 1/9/01 4/14/05	U U U U U U U U U U U U U 4.70 176.00	6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90 7/12/96 10/22/89 8/2/06 6/26/90 8/2/06	0.04 0.01 0.13 0.05 1.18 0.06 0.00 0.05 0.19 1.33 0.00 13.07 325.62	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved Selenium, dissolved	163 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 164 26 164	0.07 0.01 0.80 0.05 0.13 9.10 0.14 0.00 0.13 0.52 7.00 0.01 27.70	7/30/03 6/26/90 10/22/89 10/22/89 7/15/04 12/12/08 7/30/03 6/15/92 10/22/89 7/30/03 10/22/89 9/27/90 1/9/01	U U U U U U U U U U U U 4.70	6/26/90 6/26/90 7/18/95 6/26/90 6/26/90 4/27/04 6/26/90 6/26/90 7/12/96 10/22/89 8/2/06 6/26/90 8/2/06	0.04 0.01 0.13 0.03 0.05 1.18 0.06 0.00 0.05 0.19 1.33 0.00 13.07	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 14: 89-2 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 2019 Stand Contraction



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	riigii	Date	LOW	Date	Average	Units
		11,000.00	8/15/17	170.00	6/12/90	1 0 1 0 7 1	
Bicarbonate as CaCO3	91			170.00		1,848.71	mg/l
Carbonate as CaCO3	91	6,530.00	12/13/16	9.00	4/27/04	377.32	mg/l
Total Alkalinity as	91	11,800.00	8/15/17	477.00	4/16/02	2,300.65	mg/l
Bromide	23	0.10	1/31/91	0.08	7/31/09	0.10	mg/l
Cation-Anion Balance	88	30.70	12/13/16	-14.70	2/27/17	-0.14	%
Sum of Anions	88	385.00	8/15/17	11.49	2/24/92	71.10	meq/l
Sum of Cations	88	385.00	12/13/16	11.50	9/27/90	69.89	meq/l
Chemical Oxygen	19	191.00	6/29/16	10.00	10/22/02	61.30	mg/l
Chloride	90	5,260.00	8/15/17	10.00	1/31/91	824.81	mg/l
Conductivity, Lab	89	29,900.00	8/15/17	1,075.00	1/31/91	6,552.98	µmhos
Fluoride	91	40.90	8/15/17	1.40	4/27/04	14.70	mg/l
Hardness as CaCO3	91	98.00	11/6/14	4.00	9/9/15	43.04	mg/l
Nitrate as N, dissolved	23	3.99	1/31/91	0.02	9/27/90	0.70	mg/l
Nitrate/Nitrite as N,	23	4.00	1/31/91	0.02	9/27/90	0.60	mg/l
Nitrite as N, dissolved	23	0.02	9/27/90	0.02	1/31/91	0.02	mg/l
Nitrogen, Ammonia	22	5.10	8/21/15	0.01	9/27/90	1.03	mg/l
	22	2.50	6/29/16	0.00	1/31/91	0.53	
Nitrogen, Organic Nitrogen, Total Kjeldahl	22	7.10	6/29/16	0.10	9/27/90	1.43	mg/l mg/l
pH, lab	89	12.80	1/27/16	6.30	7/25/02	8.79	units
Phosphate, total	19	11.00	6/29/16	0.06	6/28/07	1.35	mg/l
Phosphorus, total	22	3.40	6/29/16	0.02	6/28/07	0.38	mg/l
SAR in Water	87	1,600.00	12/13/16	25.30	8/4/08	131.83	none
Sulfate	91	933.00	9/9/15	10.00	10/4/11	90.83	mg/l
Sulfide	23	12.00	10/19/00	0.07	10/22/02	4.14	mg/l
Total Dissolved Solids	91	21,100.00	8/15/17	700.00	7/21/94	3,833.84	mg/l
Conductivity, Field	308	32,600.00	1/27/16	1,122.70	5/4/10	2,964.49	µmhos
pH, Field	92	12.50	4/13/16	7.10	3/16/14	8.52	units
Temperature (°C), Field	64	24.40	7/28/11	7.50	3/4/13	18.81	(°C)
Water Level, Field	10	549.12	10/15/15	531.00	4/21/16	539.16	Ft.
,							
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples					J	
Aluminum, dissolved	23	0.05	6/12/90	U	6/28/07	0.05	mg/l
	20		8/21/15	Ŭ	10/26/04	0.00	mg/l
Areanic dissolved	23	0.05		0			
Arsenic, dissolved	23	0.05		0.02	1/31/01	0.47	mal
Barium, dissolved	23	1.77	11/6/14	0.02	1/31/91	0.47	mg/l
Barium, dissolved Beryllium, dissolved	23 23	<u>1.77</u> 0.01	11/6/14 6/12/90	U	6/12/90	0.01	mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved	23 23 91	1.77 0.01 10.10	11/6/14 6/12/90 8/21/15	U 0.25	6/12/90 6/12/90	0.01 1.54	mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	23 23 91 23	1.77 0.01 10.10 0.01	11/6/14 6/12/90 8/21/15 6/12/90	U 0.25 U	6/12/90 6/12/90 9/27/90	0.01 1.54 0.01	mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	23 23 91 23 89	1.77 0.01 10.10 0.01 12.00	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15	U 0.25 U 0.00	6/12/90 6/12/90 9/27/90 5/17/17	0.01 1.54 0.01 4.92	mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	23 23 91 23 89 23	1.77 0.01 10.10 0.01 12.00 0.02	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06	U 0.25 U 0.00 U	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90	0.01 1.54 0.01 4.92 0.01	mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	23 23 91 23 89 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90	U 0.25 U 0.00 U U	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90	0.01 1.54 0.01 4.92 0.01 0.01	mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	23 23 91 23 89 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15	U 0.25 U 0.00 U U U U	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 9/27/90	0.01 1.54 0.01 4.92 0.01 0.01 0.23	mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	23 23 91 23 89 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90	U 0.25 U 0.00 U U	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 9/27/90 6/12/90	0.01 1.54 0.01 4.92 0.01 0.01	mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	23 23 91 23 89 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15	U 0.25 U 0.00 U U U U	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 9/27/90	0.01 1.54 0.01 4.92 0.01 0.01 0.23	mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	23 23 91 23 89 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90	U 0.25 U 0.00 U U U U U U 0.01	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	23 23 91 23 89 23 23 23 23 23 23 23 91	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 11/6/14	U 0.25 U 0.00 U U U 0.01 2.00	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02 0.18 8.14	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	23 23 91 23 89 23 23 23 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.08	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 11/6/14 10/4/11	U 0.25 U 0.00 U U U U U U 0.01	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02 0.18 8.14 0.02	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	23 23 91 23 89 23 23 23 23 23 23 91 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.08	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 11/6/14 11/6/14 10/4/11 10/30/03	U 0.25 U 0.00 U U U 0.01 2.00 0.01 U	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90	0.01 1.54 0.01 4.92 0.01 0.23 0.02 0.18 8.14 0.02 0.0002	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	23 23 91 23 89 23 23 23 23 91 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.08 0.0004	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 11/6/14 10/4/11 10/30/03 6/12/90	U 0.25 U 0.00 U U U U 0.01 2.00 0.01 U U U	6/12/90 6/12/90 9/27/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/22/10	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02 0.18 8.14 0.02 0.0002 0.04	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	23 23 91 23 89 23 23 23 23 91 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.08 0.004 0.05 0.02	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 11/6/14 10/4/11 10/30/03 6/12/90 6/12/90	U 0.25 U 0.00 U U U U U 0.01 2.00 0.01 U U U U	6/12/90 6/12/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/22/10 6/12/90 9/15/07 6/12/90	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02 0.18 8.14 0.02 0.0002 0.04 0.02	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	23 23 91 23 89 23 23 23 23 91 23 23 23 23 23 91 23 23 91 23 23 91 23 91 91 23 91 91 23 91 91 23 91 91 23 23 91 91 23 23 91 91 23 23 91 91 23 23 23 91 91 23 23 91 23 23 23 23 91 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.08 0.004 0.05 0.02 746.00	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 10/4/11 10/30/03 6/12/90 6/12/90 12/13/16	U 0.25 U 0.00 U U U U 0.01 2.00 0.01 U U U U U U 0.40	6/12/90 6/12/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/22/10 6/12/90 9/15/07 6/12/90 7/18/00	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02 0.18 8.14 0.02 0.0002 0.04 0.02 32.19	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	23 23 91 23 89 23 23 23 23 91 23 23 23 91 23 23 91 23 23 91 23 23 91 23 23 91 23 23 91 23 23 91 23 23 91 23 23 23 91 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.08 0.0004 0.05 0.02 746.00 0.0014	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 10/4/11 10/30/03 6/12/90 6/12/90 12/13/16 8/21/15	U 0.25 U 0.00 U U U 0.01 2.00 0.01 U U U U U U 0.40 U	6/12/90 6/12/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/15/07 6/12/90 7/18/00 6/12/90	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02 0.18 8.14 0.02 0.0002 0.04 0.02 32.19 0.0011	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	23 23 91 23 89 23 23 23 23 23 91 23 23 23 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.05 0.02 746.00 0.0014	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 10/4/11 10/30/03 6/12/90 6/12/90 12/13/16 8/21/15 9/9/15	U 0.25 U 0.00 U U U 0.01 2.00 0.01 U U U U U 0.40 U 7.00	6/12/90 6/12/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/15/07 6/12/90 7/18/00 6/12/90 8/10/16	0.01 1.54 0.01 4.92 0.01 0.01 0.23 0.02 0.18 8.14 0.02 0.0002 0.04 0.02 32.19 0.0011 13.28	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	23 23 91 23 89 23 23 23 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.05 0.02 746.00 0.0014 40.00 8,550.00	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 10/4/11 10/30/03 6/12/90 6/12/90 6/12/90 12/13/16 8/21/15 9/9/15 8/15/17	U 0.25 U 0.00 U U U 0.01 2.00 0.01 U U U U U U 0.40 U 7.00 259.00	6/12/90 6/12/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/15/07 6/12/90 7/18/00 6/12/90 8/10/16 6/12/90	0.01 1.54 0.01 4.92 0.01 0.23 0.02 0.18 8.14 0.02 0.002 0.04 0.02 32.19 0.0011 13.28 1,551.30	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	23 23 91 23 89 23 23 23 23 23 91 23 23 23 23 23 23 23 91 23 91 23 91 23 91 91 91 91	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.049 19.00 0.05 0.02 746.00 0.0014 40.00 8,550.00 4.93	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 10/4/11 10/30/03 6/12/90 6/12/90 6/12/90 12/13/16 8/21/15 9/9/15 8/15/17 11/6/14	U 0.25 U 0.00 U U U 0.01 2.00 0.01 U U U U U 0.40 U 7.00 259.00 0.03	6/12/90 6/12/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/15/07 6/12/90 7/18/00 6/12/90 8/10/16 6/12/90 9/9/15	0.01 1.54 0.01 4.92 0.01 0.23 0.02 0.18 8.14 0.02 0.04 0.02 32.19 0.0011 13.28 1,551.30 1.78	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	23 23 91 23 89 23 23 23 23 23 23 23 23 23 23 23 23 23	1.77 0.01 10.10 0.01 12.00 0.02 0.01 3.00 0.02 0.49 19.00 0.05 0.02 746.00 0.0014 40.00 8,550.00	11/6/14 6/12/90 8/21/15 6/12/90 8/21/15 9/28/06 6/12/90 8/21/15 6/12/90 11/6/14 10/4/11 10/30/03 6/12/90 6/12/90 6/12/90 12/13/16 8/21/15 9/9/15 8/15/17	U 0.25 U 0.00 U U U 0.01 2.00 0.01 U U U U U U 0.40 U 7.00 259.00	6/12/90 6/12/90 5/17/17 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 6/12/90 9/22/10 6/12/90 9/15/07 6/12/90 7/18/00 6/12/90 8/10/16 6/12/90	0.01 1.54 0.01 4.92 0.01 0.23 0.02 0.18 8.14 0.02 0.002 0.04 0.02 32.19 0.0011 13.28 1,551.30	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 15: 90-1 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 2013 A TANK WE DO DO DO



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	riigii	Date	LOW	Date	Average	Units
Bicarbonate as CaCO3	111	1,680.00	9/24/03	45.00	6/26/02	800.51	mg/l
Carbonate as CaCO3	111	693.00	6/26/02	10.00	12/16/03	83.11	mg/l
Total Alkalinity as	111	1,740.00	9/24/03	142.00	9/28/06	873.15	mg/l
Bromide	29	16.00	6/16/97	0.29	<u>9/28/00</u> 8/1/90	5.56	mg/l
Cation-Anion Balance	108	11.90	6/23/10	-68.80	8/15/17	-1.95	<u>%</u>
Sum of Anions	108	153.40	5/24/94	34.16	8/1/90	88.48	
Sum of Cations	108	143.00	2/27/97	10.00	8/15/17	85.74	meq/l
Chemical Oxygen	21	840.00	8/16/94	10.00	<u>8/16/96</u>	199.29	<u>meq/l</u> mg/l
Chloride	111	4,690.00	5/24/94	700.00	8/1/90	2,555.77	mg/l
Conductivity, Lab	108	4,090.00	2/21/94	309.00	5/27/15	8,818.07	µmhos
	108	23.70	8/1/90			12.66	
Fluoride Hardness as CaCO3	111		2/21/94	5.50 25.00	<u>6/14/08</u> 8/15/17	91.38	mg/l
Nitrate as N, dissolved	28	204.00 0.08	6/26/02	0.02	6/28/06		mg/l mg/l
Nitrate/Nitrite as N,	28	0.08	6/16/11	0.02	6/28/06	0.05	
	28	0.09	6/16/11	0.02	1/29/91	0.08	mg/l
Nitrite as N, dissolved	20				8/13/90		mg/l
Nitrogen, Ammonia Nitrogen, Organic	27	3.30	8/10/08 3/14/08	0.83 0.40	7/21/93	1.90 3.48	mg/l
Nitrogen, Total Kjeldahl	27	<u>10.10</u> 12.10	3/14/08				mg/l
	108			1.30 7.70	<u>6/14/00</u> 9/14/04	5.12 8.52	mg/l
<u>pH, lab</u>		8.90	4/24/91				units
Phosphate, total	25 27	<u>155.00</u> 0.11	6/28/06	0.06	8/14/95	17.76	mg/l
Phosphorus, total			8/13/90	0.02	7/31/91	0.06	mg/l
SAR in Water Sulfate	108	4,950.00	6/24/03	19.00	8/15/17	<u>137.84</u> 70.78	none
	110 22	2,310.00	6/15/14	4.00 0.02	<u>12/16/04</u> 8/10/08		mg/l
Sulfide		5.80	6/26/02			1.18	mg/l
Total Dissolved Solids	111	8,270.00	2/27/97	2,110.00	8/15/17	5,171.33	mg/l
Conductivity, Field	169	13,600.00	11/17/93	2,900.00	8/1/90	8,794.49	umhos
pH, Field	164	9.53	7/29/09	7.40	8/26/15	8.55	units
Temperature (°C), Field	112	16.50	5/1/02	7.40	12/15/05	12.22	(°C)
Water Level, Field	92	16.50 544.21	5/1/02 3/1/10	7.40 516.40	12/15/05	538.09	(°C) Ft.
Water Level, Field	92	544.21	3/1/10	516.40	10/1/90	538.09	Ft.
Water Level, Field Parameters	92 No. of						
Water Level, Field Parameters Metals	92 No. of Samples	544.21 High	3/1/10 Date	516.40 Low	10/1/90 Date	538.09 Average	Ft. Units
Water Level, Field Parameters Metals Aluminum, dissolved	92 No. of Samples 28	544.21 High 0.80	3/1/10 Date 6/16/05	516.40	10/1/90 Date 9/21/10	538.09 Average 0.28	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved	92 No. of <u>Samples</u> 28 28	544.21 High 0.80 0.05	3/1/10 Date 6/16/05 1/29/91	516.40 Low U 0.00	10/1/90 Date 9/21/10 6/28/06	538.09 Average 0.28 0.01	Ft. Units mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	92 No. of <u>Samples</u> 28 28 28 28	544.21 High 0.80 0.05 1.56	3/1/10 Date 6/16/05 1/29/91 3/14/08	516.40 Low U 0.00 0.09	10/1/90 Date 9/21/10 6/28/06 8/1/90	538.09 Average 0.28 0.01 0.87	Ft. Units mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	92 No. of Samples 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A	516.40 Low U 0.00 0.09 U	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A	538.09 Average 0.28 0.01 0.87 U	Ft. Units mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	92 No. of Samples 28 28 28 28 28 28 28 111	544.21 High 0.80 0.05 1.56 U 1.29	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92	516.40 Low U 0.00 0.09 U 0.10	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96	538.09 Average 0.28 0.01 0.87 U 0.32	Ft. Units mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	92 No. of Samples 28 28 28 28 111 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93	516.40 Low U 0.00 0.09 U 0.10 U	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93	538.09 Average 0.28 0.01 0.87 U 0.32 0.03	Ft. Units mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	92 No. of Samples 28 28 28 28 28 28 111 28 111	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04	516.40 Low U 0.00 0.09 U 0.10 U 3.00	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	92 No. of Samples 28 28 28 28 28 28 111 28 111 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	92 No. of Samples 28 28 28 28 28 111 28 111 28 111 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U U U U	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U 0.07	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U 0.07 U	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97	516.40 Low 0.00 0.09 U 0.10 U 0.10 U 0.10 U 0.07 U U U U U U U U U U U U U	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94	516.40 Low 0.00 0.09 U 0.10 U 3.00 U U 0.07 U U 0.07 U U 3.90	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U 0.07 U U 0.07 U U 3.90 0.01	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 27 111 27 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U 0.07 U U 0.07 U U 3.90 0.01 0.00	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 27 111 27 28 28 28 28 28 27 111 27 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00 0.37	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07 8/13/90	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U 0.07 U U 0.07 U U 3.90 0.01 0.00 0.13	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95 10/25/90	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00 0.24	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 27 111 27 28 28 28 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00 0.37 U	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07 8/13/90 #N/A	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U 0.07 U U 3.90 0.01 0.00 0.13 0.00	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95 10/25/90 #N/A	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00 0.24 U	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 27 111 27 28 28 28 28 28 28 28 28 28 28 28 111	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00 0.37 U 10.00	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07 8/13/90 #N/A 7/31/91	516.40 Low U 0.00 0.09 U 0.10 U 3.00 U U 0.07 U 0.07 U 3.90 0.01 0.00 0.13 0.00 1.70	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95 10/25/90 #N/A 11/14/16	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00 0.24 U 3.19	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Selenium, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00 0.37 U 10.00 0.003	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07 8/13/90 #N/A 7/31/91 1/29/91	516.40 Low U 0.00 0.09 U 0.10 U 0.00 U 0.10 U 3.00 U 0.07 U 0.07 U 0.01 0.01 0.00 0.13 0.00 1.70 0.001	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95 10/25/90 #N/A 11/14/16 8/13/90	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00 0.24 U 3.19	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 27 111 27 28 28 28 28 28 28 28 28 28 28 28 28 111 27 111 27 28 28 28 28 28 111	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00 0.37 U 10.00 0.03 63.00	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07 8/13/90 #N/A 7/31/91 1/29/91 12/16/04	516.40 Low U 0.00 0.09 U 0.10 U 0.10 U 3.00 U 0.07 U 0.07 U 0.01 0.02 0.01 0.00 1.3 0.00 1.70 0.001 2.10	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95 10/25/90 #N/A 11/14/16 8/13/90 4/20/92	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00 0.24 U 3.19 0.002 12.46	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Solium, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00 0.37 U 10.00 0.37 U 10.00 0.03 63.00 3,180.00	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07 8/13/90 #N/A 7/31/91 1/29/91 12/16/04 2/27/97	516.40 Low U 0.00 0.09 U 0.10 U 0.10 U 3.00 U 0.07 U 0.07 U 0.01 0.02 0.01 0.00 1.3 0.00 1.70 0.001 2.10 220.00	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95 10/25/90 #N/A 11/14/16 8/13/90 4/20/92 8/15/17	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00 0.24 U 3.19 0.002 12.46 1,960.95	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	92 No. of Samples 28 28 28 28 111 28 111 28 28 28 28 28 28 28 28 27 111 27 28 28 28 28 28 28 28 28 28 28 28 28 111 27 111 27 28 28 28 28 28 111 27 111 27 28 28 28 111 28 28 111 28 28 111 28 28 111 28 28 111 28 28 111 28 28 111 28 28 111 28 28 111 28 28 28 111 28 28 28 28 28 28 28 28 28 28 28 28 28	544.21 High 0.80 0.05 1.56 U 1.29 0.03 45.00 U 0.08 1.67 U 0.10 37.00 0.15 0.00 0.37 U 10.00 0.03 63.00	3/1/10 Date 6/16/05 1/29/91 3/14/08 #N/A 7/21/92 7/21/93 12/16/04 11/27/12 6/24/04 10/25/90 #N/A 6/16/97 2/21/94 10/25/90 9/15/07 8/13/90 #N/A 7/31/91 1/29/91 12/16/04	516.40 Low U 0.00 0.09 U 0.10 U 0.10 U 3.00 U 0.07 U 0.07 U 0.01 0.02 0.01 0.00 1.3 0.00 1.70 0.001 2.10	10/1/90 Date 9/21/10 6/28/06 8/1/90 #N/A 11/20/96 7/21/93 11/20/96 11/27/12 6/24/04 9/21/10 #N/A 8/13/90 8/15/17 9/21/10 8/14/95 10/25/90 #N/A 11/14/16 8/13/90 4/20/92	538.09 Average 0.28 0.01 0.87 U 0.32 0.03 11.20 U 0.08 0.39 U 0.04 15.35 0.05 0.00 0.24 U 3.19 0.002 12.46	Ft. Units mg/l

Table 16: 90-4 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 20 W Stranger



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	ingn	Dute	Low	Duic	Average	onito
Bicarbonate as CaCO3	6	406	11/4/14	198	2/10/15	286	mg/l
Carbonate as CaCO3	6	273	1/29/15	53	11/4/14	175	mg/l
Total Alkalinity as	6	556	9/28/17	377	2/10/15	461	
							mg/l
Bromide	6	0.17	1/29/15	0.17	1/29/15	0.17	mg/l
Cation-Anion Balance	6	0.00	12/15/15	-6.70	2/10/15	-3.13	%
Sum of Anions	6	18.00	1/29/15	15.00	12/15/15	16.17	meq/l
Sum of Cations	6	16.00	1/29/15	14.00	2/10/15	15.17	meq/l
Chemical Oxygen	6	37.00	12/15/15	15.00	1/29/15	22.50	mg/l
Chloride	6	140	9/28/17	92	11/4/14	124	mg/l
Conductivity, Lab	6	1,750	1/29/15	1,430	11/4/14	1,560	µmhos
Fluoride	6	6.12	9/28/17	5.52	2/10/15	5.76	mg/l
Hardness as CaCO3	6	45.00	11/4/14	15.00	4/5/16	22.38	mg/l
Nitrate as N, dissolved	6	0.02	1/29/15	0.02	1/29/15	0.02	mg/l
Nitrate/Nitrite as N,	6	0.03	1/29/15	0.03	1/29/15	0.03	mg/l
Nitrite as N, dissolved	6	0.01	1/29/15	0.01	1/29/15	0.01	mg/l
Nitrogen, Ammonia	6	1.51	9/28/17	0.47	4/5/16	0.73	mg/l
Nitrogen, Organic	6	0.50	1/29/15	0.10	4/5/16	0.28	mg/l
Nitrogen, Total Kjeldahl	6	1.90	9/28/17	0.60	4/5/16	0.95	mg/l
pH, lab	6	9.70	1/29/15	8.70	11/4/14	9.47	units
Phosphate, total	6	0.28	1/29/15	0.09	11/4/14	0.21	mg/l
Phosphorus, total	6	0.09	1/29/15	0.03	11/4/14	0.21	mg/l
	6	39	9/28/17	20.00	11/4/14	32	
SAR in Water	6		2/10/15				none
Sulfate		210		81.70	9/28/17	148	mg/l
Sulfide	6	1.12	9/28/17	0.04	11/4/14	0.59	mg/l
Total Dissolved Solids	6	987	1/29/15	843	12/15/15	900	mg/l
Conductivity, Field	4	1,882	9/28/17	1,432	4/5/16	1,662	µmhos
pH, Field	4	9.37	9/28/17	8.66	4/5/16	9.06	units
Temperature (°C), Field	4	21.37	9/28/17	18.00	4/5/16	19.12	(°C)
							F 1
Water Level, Field	4	581.90	9/28/17	572.10	1/16/15	577.24	Ft.
Parameters	No. of	581.90 High	9/28/17 Date	572.10	1/16/15 Date	Average	Units
Parameters Metals		High	Date	Low	Date	Average	Units
Parameters	No. of		Date 4/5/16	Low U			
Parameters Metals	No. of Samples	High	Date	Low	Date	Average	Units mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved	No. of Samples 6 6	High U 0.00	Date 4/5/16 11/4/14	Low U U	Date 4/5/16 2/10/15	Average U 0.00	Units mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 6 6 6	High U 0.00 0.02	Date 4/5/16 11/4/14 11/4/14	Low U U 0.01	Date 4/5/16 2/10/15 12/15/15	Average U 0.00 0.01	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 6 6 6 6 6	High U 0.00 0.02 U	Date 4/5/16 11/4/14 11/4/14 4/5/16	Low U U 0.01 U	Date 4/5/16 2/10/15 12/15/15 4/5/16	Average U 0.00 0.01 U	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	No. of Samples 6 6 6 6 6 6	High U 0.00 0.02 U 0.28	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15	Low U U 0.01 U 0.21	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15	Average U 0.00 0.01 U 0.25	Units mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	No. of Samples 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16	Low U U 0.01 U 0.21 U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16	Average U 0.00 0.01 U 0.25 U	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14	Low U U 0.01 U 0.21 U U U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16	Low U U 0.01 U 0.21 U U U U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83 U	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U U U U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 4/5/16 4/5/16	Low U U 0.01 U 0.21 U U U U U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83 U U U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U U U 0.86	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 4/5/16 9/28/17	Low U U 0.01 U 0.21 U U U U U 0.03	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 4/5/16 11/4/14	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U U 0.86 U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 4/5/16 9/28/17 4/5/16	Low U U 0.01 U 0.21 U U U U U 0.03 U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.18	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 4/5/16 9/28/17 4/5/16 9/28/17	Low U U 0.01 U 0.21 U U U U U 0.03 U 0.12	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 4/5/16 11/4/14	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.86 U 0.18 6.30	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 4/5/16 11/4/14 9/28/17	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.86 U 0.18 6.30 U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U U U U U U U U U U U U U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 4/5/16 11/4/14 9/28/17 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.86 U 0.18 6.30 U U U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 11/4/14	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U U U U U U U U U U U U U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 4/5/16 11/4/14 9/28/17 4/5/16 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U U U U U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.18 6.30 U U 0.18	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U U U U U U U U U U U U U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.86 U 0.18 6.30 U U 0.18 0.318 U U 0.18 U 0.18 U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17 4/5/16	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U 0.12 U U 0.12 U 0.12 U 0.12 U 0.12 U 0.12 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.06 U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U U 0.12 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.18 6.30 U U 0.18	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U U U U U 0.06	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U U 0.12	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.86 U 0.18 6.30 U U 0.18 0.318 U U 0.18 U 0.18 U	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17 4/5/16	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U 0.12 U U 0.12 U 0.12 U 0.12 U 0.12 U 0.12 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.01 U 0.03 U 0.06 U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 4/5/16	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U U 0.12 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.18 6.30 U U 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.00 0.18 0.02 0.28 0.02 0.0	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 4/5/16	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U 0.12 U U U 0.06 U 5.00 U	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U U 0.12 U 0.12 U 8.20 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.18 6.30 U U 0.18 0.1	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 4/5/16	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U 0.12 U U 0.06 U 5.00 U 0.20	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 11/4/14 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 2/10/15	Average U 0.00 0.01 U 0.25 U 2.83 U U 2.83 U U 0.24 U 0.14 3.73 U U 0.12 U 0.12 U 8.20 U 3.24	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Copper, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.18 6.30 U U 0.18 0.18 0.18 11.00 U 11.00 U 13.90 357	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 11/4/14 11/4/14 11/4/14 11/2/15	Low U U 0.01 U 0.21 U U U U 0.03 U 0.12 U U 0.06 U 5.00 U 0.20 303	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 11/4/14 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 2/10/15 2/10/15	Average U 0.00 0.01 U 0.25 U 2.83 U U 0.24 U 0.14 3.73 U 0.12 U 0.12 U 8.20 U 3.24 323	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.00 0.02 U 0.28 U 7.80 U 0.86 U 0.18 6.30 U U 0.18 0.1	Date 4/5/16 11/4/14 11/4/14 4/5/16 1/29/15 4/5/16 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 11/4/14 11/4/14 4/5/16 9/28/17 4/5/16 9/28/17 4/5/16	Low U U 0.01 U 0.21 U U U 0.03 U 0.12 U 0.12 U U 0.06 U 5.00 U 0.20	Date 4/5/16 2/10/15 12/15/15 4/5/16 2/10/15 4/5/16 4/5/16 11/4/14 4/5/16 11/4/14 9/28/17 4/5/16 11/4/14 9/28/17 2/10/15	Average U 0.00 0.01 U 0.25 U 2.83 U U 2.83 U U 0.24 U 0.14 3.73 U U 0.12 U 0.12 U 8.20 U 3.24	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 17: AG-1 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 20 The Martin NY 17 310154



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples		Duit		Date	, the uge	•
Bicarbonate as CaCO3	56	1,250.00	3/22/93	34.00	9/8/93	256.38	mg/l
Carbonate as CaCO3	56	870.00	3/22/93	24.00	6/30/09	274.18	mg/l
Total Alkalinity as	56	2,120.00	3/22/93	176.00	6/14/08	491.43	mg/l
Bromide	27	2.70	11/29/11	0.07	5/26/00	0.71	mg/l
Cation-Anion Balance	54	13.30	11/6/14	-9.10	3/22/16	2.36	<u>%</u>
Sum of Anions	54	19.49	9/16/91	9.50	5/29/03	13.01	meq/l
Sum of Cations	54	18.34	9/16/91	9.50	5/29/03	13.75	
Chemical Oxygen	25	1,300.00	5/29/02	90.00	5/26/04	469.52	meq/l
						409.52 111.63	mg/l
<u>Chloride</u>	56	252.00	6/14/08	21.00	12/20/93		mg/l
Conductivity, Lab	55	3,320.00	9/15/92	1,010.00	5/29/03	1,523.64	µmhos
Fluoride	56	27.00	12/19/95	2.20	9/15/92	8.66	mg/l
Hardness as CaCO3	56	962.00	3/22/93	0.00	1/19/94	35.21	mg/l
Nitrate as N, dissolved	27	3.89	6/14/08	0.02	9/15/92	0.43	mg/l
Nitrate/Nitrite as N,	27	3.90	6/14/08	0.02	9/15/92	0.33	mg/l
Nitrite as N, dissolved	27	0.05	11/6/14	0.01	6/18/96	0.02	mg/l
Nitrogen, Ammonia	27	21.30	9/8/93	0.34	8/23/17	4.09	mg/l
Nitrogen, Organic	27	104.00	5/29/02	0.20	8/23/17	19.10	mg/l
Nitrogen, Total Kjeldahl	27	106.00	5/29/02	0.50	8/23/17	22.01	mg/l
pH, lab	55	11.90	6/16/92	8.60	6/30/09	10.28	units
Phosphate, total	27	155.00	7/29/09	0.03	5/26/99	7.61	mg/l
Phosphorus, total	27	2.95	9/27/90	0.01	5/26/99	0.27	mg/l
SAR in Water	47	190.00	11/14/97	3.83	3/25/92	65.09	none
Sulfate	56	360.00	9/16/91	0.80	2/26/97	32.58	mg/l
Sulfide	27	29.00	3/22/16	0.02	9/15/92	5.04	mg/l
Total Dissolved Solids	55	2,752.00	3/22/93	578.00	9/27/90	849.93	mg/l
Conductivity, Field	72	3,910.00	7/29/09	694.00	6/1/05	1,591.25	µmhos
pH, Field	71	12.90	9/13/95	8.30	5/1/02	10.83	units
Temperature (°C), Field	32	22.50	6/1/05	7.00	7/1/91	12.53	(°C)
						12100	()
Water Level Field	51			409.63	11/1/90	424 04	Ft
Water Level, Field	51	481.90	8/23/17	409.63	11/1/90	424.04	Ft.
		481.90	8/23/17			-	
Parameters	No. of			409.63	11/1/90 Date	424.04	Ft. Units
Parameters Metals	No. of Samples	481.90 High	8/23/17 Date	Low	Date	Average	Units
Parameters Metals Aluminum, dissolved	No. of Samples 27	481.90 High 1.35	8/23/17 Date 11/6/14	Low U	Date 8/23/17	Average	Units mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved	No. of Samples 27 27	481.90 High 1.35 0.01	8/23/17 Date 11/6/14 8/23/17	Low U 0.001	Date 8/23/17 5/26/00	Average 0.22 0.003	Units mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 27 27 27 27	481.90 High 1.35 0.01 0.20	8/23/17 Date 11/6/14 8/23/17 7/29/09	Low U 0.001 U	Date 8/23/17 5/26/00 9/8/93	Average 0.22 0.003 0.04	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16	Low U 0.001 U U	Date 8/23/17 5/26/00 9/8/93 3/22/16	Average 0.22 0.003 0.04	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	No. of Samples 27 27 27 27 27 27 56	481.90 High 1.35 0.01 0.20 U 0.47	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93	Low U 0.001 U U 0.10	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10	Average 0.22 0.003 0.04 U 0.22	Units mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	No. of Samples 27 27 27 27 27 56 27	481.90 High 1.35 0.01 0.20 U 0.47 U	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16	Low U 0.001 U U 0.10 U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16	Average 0.22 0.003 0.04 U 0.22 U	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	No. of Samples 27 27 27 27 27 56 27 56 27 56	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09	Low U 0.001 U U 0.10 U U U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97	Average 0.22 0.003 0.04 U 0.22 U 4.28	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	No. of Samples 27 27 27 27 56 27 56 27 56 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14	Low U 0.001 U U 0.10 U U U U U U U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	No. of Samples 27 27 27 27 56 27 56 27 56 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09	Low U 0.001 U 0.10 U U U U U U U U U U U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	No. of Samples 27 27 27 27 56 27 56 27 56 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14	Low U 0.001 U U 0.10 U U U U U 0.01	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	No. of Samples 27 27 27 27 56 27 56 27 56 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10	Low U 0.001 U U 0.10 U U U U 0.01 U U U 0.01 U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94	Average 0.22 0.003 0.04 U 0.22 0.04 0.22 0.03 3.44 0.14	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	No. of Samples 27 27 27 27 56 27 56 27 56 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90	Low U 0.001 U U 0.10 U U U U 0.01 U 0.02	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 27 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 56	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90	Low U 0.001 U U 0.10 U U U U 0.01 U 0.02 U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 27 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 11/6/14	Low U 0.001 U U 0.10 U U U U 0.01 U 0.02 U U U U U U U 0.02 U U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of Samples 27 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 11/6/14 7/30/91	Low U 0.001 U U 0.10 U U U U U 0.01 U 0.02 U U U U U U U U U U U U U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 27 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 11/6/14 7/30/91 5/24/05	Low U 0.001 U U 0.10 U U U U 0.01 U 0.02 U U U U U U U 0.02 U U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of Samples 27 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13 0.03	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 11/6/14 7/30/91 5/24/05 9/15/92	Low U 0.001 U U 0.10 U U U U 0.01 U 0.02 U U U U 0.02 U U U 0.01 U U 0.01 U 0.001 U 0.10 U 0.10 U 0.001 U 0.10 U 0.10 U 0.001 U 0.10 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.002 U 0.001 U 0.001 U 0.002 U 0.001 U 0.002 U 0.001 U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01 3/22/16	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05 0.01	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 27 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 11/6/14 7/30/91 5/24/05	Low U 0.001 U U 0.10 U U U U 0.01 U U U U U U U U U U U U U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	No. of Samples 27 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 0.47 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13 0.03	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 11/6/14 7/30/91 5/24/05 9/15/92	Low U 0.001 U U 0.10 U U U U 0.01 U 0.02 U U U U 0.02 U U U 0.01 U U 0.01 U 0.001 U 0.10 U 0.10 U 0.001 U 0.10 U 0.10 U 0.001 U 0.10 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.10 U 0.001 U 0.002 U 0.001 U 0.001 U 0.002 U 0.001 U 0.002 U 0.001 U	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01 3/22/16	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05 0.01	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	No. of Samples 27 27 27 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 27.50 0.02 0.047 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13 0.03 39.00 0.001	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 9/27/90 11/6/14 7/30/91 5/24/05 9/15/92 3/22/93 7/30/91	Low U 0.001 U U 0.10 U U U U U 0.01 U U U U 0.02 U U U U 0.01 U 0.02 U U 0.01 U 0.10 0.001 0.10 0.001 0.10 0.001 0.10 0.001 0.002 0.002 0.001 0.001 0.002 0.001 0.001 0.002 0.001	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01 3/22/16 8/23/17 7/30/91	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05 0.01 6.18	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 27.50 0.02 0.047 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13 0.03 39.00 0.001 44.60	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 9/27/90 9/27/90 11/6/14 7/30/91 5/24/05 9/15/92 3/22/93 7/30/91 6/16/92	Low U 0.001 U U 0.10 U U U U U 0.01 U U 0.02 U U U 0.01 U 0.01 U 0.01 U 0.01 U 0.02 U 0.001 U 0.00 0.10 0 0 0 0 0 0 0 0 0 0 0 0 0	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01 3/22/16 8/23/17 7/30/91 10/3/12	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05 0.01 6.18 0.001 16.29	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Solium, dissolved	No. of Samples 27 27 27 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 27.50 0.02 0.047 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13 0.03 39.00 0.001 44.60 567.00	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 11/6/14 7/30/91 5/24/05 9/15/92 3/22/93	Low U 0.001 U U 0.10 U U U U 0.01 U 0.02 U U 0.01 U 0.01 U 0.01 U 0.01 U 0.01 U 0.02 U 0.01 U 0.00 0.0	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01 3/22/16 8/23/17 7/30/91 10/3/12 3/25/92	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05 0.01 6.18 0.001 16.29 302.68	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 27 27 27 56 27 56 27 27 27 27 27 27 27 27 27 27 27 27 27	481.90 High 1.35 0.01 0.20 U 27.50 0.02 0.047 U 27.50 0.02 0.04 65.10 0.63 0.17 5.00 0.59 0.0007 0.13 0.03 39.00 0.001 44.60	8/23/17 Date 11/6/14 8/23/17 7/29/09 3/22/16 12/20/93 3/22/16 6/30/09 11/6/14 7/29/09 11/6/14 9/15/10 9/27/90 9/27/90 9/27/90 9/27/90 11/6/14 7/30/91 5/24/05 9/15/92 3/22/93 7/30/91 6/16/92	Low U 0.001 U U 0.10 U U U U U 0.01 U U 0.02 U U U 0.01 U 0.01 U 0.01 U 0.01 U 0.02 U 0.001 U 0.00 0.10 0 0 0 0 0 0 0 0 0 0 0 0 0	Date 8/23/17 5/26/00 9/8/93 3/22/16 3/17/10 3/22/16 11/14/97 6/23/94 7/30/91 6/30/95 6/23/94 8/23/17 5/24/05 7/29/09 9/27/90 5/9/01 3/22/16 8/23/17 7/30/91 10/3/12	Average 0.22 0.003 0.04 U 0.22 U 4.28 0.02 0.03 3.44 0.14 0.07 1.29 0.06 0.0004 0.05 0.01 6.18 0.001 16.29	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 18: IRI-4 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 2013 Start Start Bold Start



Parameters Wet Chemistry	No. of Samples	High	Date	Low	Date	Average	Units
		F29.00	10/5/14	E29.00	10/5/14	E 20 00	
Bicarbonate as CaCO3	2 2	528.00		528.00	10/5/14	528.00	mg/l
Carbonate as CaCO3	2	51.40	10/5/14	51.40		51.40	mg/l
Total Alkalinity as		579.00	10/5/14	579.00	10/5/14	579.00	mg/l
Bromide	2	<u> </u>	10/5/14	U	10/5/14	U	mg/l
Cation-Anion Balance	2	-3.70	10/5/14	-3.70	10/5/14	-3.70	%
Sum of Anions	2	14.00	10/5/14	14.00	10/5/14	14.00	meq/l
Sum of Cations	2	13.00	10/5/14	13.00	10/5/14	13.00	meq/l
Chemical Oxygen	2	U	10/5/14	U	10/5/14	U	mg/l
Chloride	2	18.60	10/5/14	18.60	10/5/14	18.60	mg/l
Conductivity, Lab	2	1,270.00	10/5/14	1,270.00	10/5/14	1,270.00	µmho
Fluoride	2	16.40	10/5/14	16.40	10/5/14	16.40	mg/l
Hardness as CaCO3	2	46.00	10/5/14	46.00	10/5/14	46.00	mg/l
Nitrate as N, dissolved	2	U	10/5/14	U	10/5/14	U	mg/l
Nitrate/Nitrite as N,	2	U	10/5/14	U	10/5/14	U	mg/l
Nitrite as N, dissolved	2	U	10/5/14	U	10/5/14	U	mg/l
Nitrogen, Ammonia	2	0.40	10/5/14	0.40	10/5/14	0.40	mg/l
Nitrogen, Organic	2	0.30	10/5/14	0.30	10/5/14	0.30	mg/l
Nitrogen, Total Kjeldahl	2	0.70	10/5/14	0.70	10/5/14	0.70	mg/l
pH. lab	2	8.60	10/5/14	8.60	10/5/14	8.60	units
Phosphate, total	2	0.06	10/5/14	0.06	10/5/14	0.06	mg/l
Phosphorus, total	2	0.02	10/5/14	0.00	10/5/14	0.00	mg/l
SAR in Water	2	17.00	10/5/14	17.00	10/5/14	17.00	none
Sulfate	2	60.00	10/5/14	60.00	10/5/14	60.00	mg/l
Sulfide	2	0.03	10/5/14	0.03	10/5/14	0.03	
							mg/l
Total Dissolved Solids	2	746.00	10/5/14	746.00	10/5/14	746.00	mg/l
Conductivity, Field	0	<u>N/A</u>	N/A	N/A	<u>N/A</u>	N/A	umho
pH, Field	0	N/A	N/A	N/A	<u>N/A</u>	N/A	units
Temperature (°C), Field	0	N/A	N/A	N/A	N/A	N/A	(°C)
Water Level, Field	0	N/A	N/A	N/A	N/A	N/A	Ft.
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples	•					
Aluminum, dissolved	2	U	10/5/14	U	10/5/14	U	mg/l
Arsenic, dissolved	2	0.02	10/5/14	0.02	10/5/14	0.02	mg/l
Barium, dissolved	2	0.13	10/5/14	U	10/5/14	0.13	mg/l
Beryllium, dissolved	2	U	10/5/14	U	10/5/14	U	mg/l
Boron, dissolved	22	U 0.25	10/5/14 10/5/14	U 0.25	10/5/14 10/5/14	U 0.25	mg/l mg/l
Boron, dissolved Cadmium, dissolved	2 2 2	U 0.25 U	10/5/14 10/5/14 10/5/14	U 0.25 U	10/5/14 10/5/14 10/5/14	U 0.25 U	mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved	2 2 2 2	U 0.25 U 6.00	10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U	10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00	mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	2 2 2 2 2 2	U 0.25 U 6.00 U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U	mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U	mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U	mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U U U	mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U U 0.12	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U U 0.12 U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40 0.01	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U U 0.12 U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U 0.12 7.40 0.01	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U 0.12 7.40 0.01 U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U U 0.12 U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U 0.12 U U U U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U 0.12 U U U U U U U U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U 0.12 U U U U U U U U U U U 1.30	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U U U 1.30	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U 0.12 7.40 0.01 U U U U U U U U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U 0.12 U U U U U U U U U U U U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U U U U 1.30 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U 0.12 7.40 0.01 U U U U U U 1.30	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U 0.12 U U U U U U U U U U U 1.30	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U U U 1.30	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U 1.30 U 11.80	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U 0.12 U U U U U U U U U U U 1.30 U	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U U U U 1.30 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U 1.30 U 11.80 267.00	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U 0.12 U U U U U U U U U U 1.30 U 11.80 267.00	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 0.00 U U U 0.12 7.40 0.01 U U U U 1.30 U 11.80 267.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U 1.30 U 11.80	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U U U U U 0.12 U U U U U U U U U U U 1.30 U 11.80	10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14 10/5/14	U 0.25 U 6.00 U U U U 0.12 7.40 0.01 U U U U U U 1.30 U 11.80	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 19: O-GMW-A Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 2013 TANK BODY TOWN

Zinc, dissolved

2

mg/l

U

10/5/14 10/5/14

U

10/5/14 10/5/14

U



Doromotora		ام الا	Dete		Dete	Averess	llaita
Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	4 050 00	40/40/47	400.00	0/40/44	700 70	···· //
Bicarbonate as CaCO3	33	1,850.00	10/18/17	483.00	6/16/14	706.79	mg/l
Carbonate as CaCO3	33	138.00	10/18/17	42.60	11/10/14	73.69	mg/l
Total Alkalinity as	33	1,980.00	10/18/17	534.00	6/16/14	780.33	mg/l
Bromide	4	0.46	7/11/13	0.03	10/4/11	0.15	mg/l
Cation-Anion Balance	32	3.40	6/16/14	-13.40	6/14/11	-2.73	%
Sum of Anions	33	60.00	10/18/17	13.70	10/4/11	20.58	meq/l
Sum of Cations	33	54.00	10/18/17	12.60	6/14/11	19.38	meq/l
Chemical Oxygen	6	20.00	10/4/11	10.00	1/20/11	14.00	mg/l
Chloride	33	673.00	10/18/17	11.00	6/14/11	113.15	mg/l
Conductivity, Lab	33	5,350	10/18/17	1,250	10/4/11	1,865	µmhos
Fluoride	33	21.50	3/16/14	13.80	9/17/12	18.17	mg/l
Hardness as CaCO3	33	56.00	10/18/17	14.00	11/30/11	22.45	mg/l
Nitrate as N, dissolved	2	0.10	11/10/14	0.06	3/30/11	0.08	mg/l
Nitrate/Nitrite as N,	2	0.10	11/10/14	0.06	3/30/11	0.08	mg/l
Nitrite as N, dissolved	10	U	4/6/16	U	4/6/16	U	mg/l
Nitrogen, Ammonia	10	1.06	3/23/17	0.39	10/4/11	0.64	mg/l
Nitrogen, Organic	8	0.40	1/20/11	0.10	3/23/11	0.20	mg/l
Nitrogen, Total Kjeldahl	10	1.00	3/23/17	0.60	3/30/11	0.80	mg/l
pH, lab	33	8.90	3/16/14	8.60	10/22/13	8.71	units
Phosphate, total	10	0.37	3/23/17	0.09	3/23/11	0.13	mg/l
	10	0.12	3/23/17	0.03	3/23/11	0.13	mg/l
Phosphorus, total	33		10/18/17				
SAR in Water		70.00	10/18/17	31.30	6/14/11	39.08	none
Sulfate	33	60.00	3/30/11	29.81	3/4/13	42.17	mg/l
Sulfide	10	3.90	10/4/11	1.67	11/5/15	2.55	mg/l
Total Dissolved Solids	33	3,160.00	10/18/17	740.00	11/30/11	1,096.76	mg/l
Conductivity, Field	77	6,376	11/14/17	719	3/23/11	1,971	µmhos
pH, Field	49	8.90	3/16/16	7.30	5/28/15	8.24	units
Temperature (°C), Field	49	25.00	7/13/16	16.35	5/17/16	21.97	(°C)
Water Level, Field	N/A	N/A	N/A	N/A	N/A	N/A	Ft.
			-	-			
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	No. of Samples					-	
		High	Date 3/23/11	Low U	Date 11/5/15	Average	Units mg/l
Metals Aluminum, dissolved	Samples					-	mg/l
Metals Aluminum, dissolved Arsenic, dissolved	Samples 10 10	0.05 U	3/23/11 3/23/17	U U	11/5/15 11/5/15	0.04 U	mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	Samples 10 10 10 10	0.05 U 0.36	3/23/11 3/23/17 3/23/17	U U 0.07	11/5/15 11/5/15 11/29/12	0.04 U 0.14	mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	Samples 10 10 10 10 10 10	0.05 U 0.36 0.00	3/23/11 3/23/17 3/23/17 1/20/11	U U 0.07 U	11/5/15 11/5/15 11/29/12 1/20/11	0.04 U 0.14 0.00	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	Samples 10 10 10 10 33	0.05 U 0.36 0.00 1.29	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17	U U 0.07 U 0.36	11/5/15 11/5/15 11/29/12 1/20/11 10/4/11	0.04 U 0.14 0.00 0.49	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	Samples 10 10 10 33 10	0.05 U 0.36 0.00 1.29 U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16	U U 0.07 U 0.36 U	11/5/15 11/5/15 11/29/12 1/20/11 10/4/11 4/6/16	0.04 U 0.14 0.00 0.49 U	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	Samples 10 10 10 33 10 33	0.05 U 0.36 0.00 1.29 U 4.90	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16	U U 0.07 U 0.36 U 2.30	11/5/15 11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11	0.04 U 0.14 0.00 0.49 U 3.00	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	Samples 10 10 10 33 10 33 10	0.05 U 0.36 0.00 1.29 U 4.90 U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16	U U 0.07 U 0.36 U 2.30 U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16	0.04 U 0.14 0.00 0.49 U 3.00 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	Samples 10 10 10 33 10 33 10 33 10 33 10 10	0.05 U 0.36 0.00 1.29 U 4.90 U U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16	U U 0.07 U 0.36 U 2.30 U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 4/6/16	0.04 U 0.14 0.00 0.49 U 3.00 U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 33 10 33	0.05 U 0.36 0.00 1.29 U 4.90 U U U U 0.69	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16 11/10/14	U U 0.07 U 0.36 U 2.30 U U U 0.05	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 4/6/16 3/23/11	0.04 U 0.14 0.00 0.49 U 3.00 U U U U 0.16	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10	0.05 U 0.36 0.00 1.29 U 4.90 U U U U 0.69 U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16 11/10/14 4/6/16	U U 0.07 U 0.36 U 2.30 U U U 0.05 U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16	0.04 U 0.14 0.00 0.49 U 3.00 U U U 0.16 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 10 10 10	0.05 U 0.36 0.00 1.29 U 4.90 U U U 0.69 U 0.15	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16 11/10/14 4/6/16 3/23/17	U U 0.07 U 0.36 U 2.30 U U 0.05 U 0.06	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11	0.04 U 0.14 0.00 0.49 U 3.00 U U U 0.16 U 0.08	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 33	0.05 U 0.36 0.00 1.29 U 4.90 U U U 0.69 U 0.15 11.10	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 11/10/14 4/6/16 3/23/17 10/18/17	U U 0.07 U 0.36 U 2.30 U U 0.05 U 0.06 2.00	11/5/15 11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.08 3.65	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 10 10	0.05 U 0.36 0.00 1.29 U 4.90 U U U 0.69 U 0.15 11.10 0.01	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 11/10/14 4/6/16 3/23/17 10/18/17 3/30/11	U U 0.07 U 0.36 U 2.30 U U 0.05 U 0.06 2.00 U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.16 U 0.08 3.65 0.01	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	Samples 10 10 10 10 33 10 33 10 10 33 10 10 33 10 10 10 10 10 10 10 10 10 10 10 10 10	0.05 U 0.36 0.00 1.29 U 4.90 U U U 0.69 U 0.15 11.10 0.01 U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 11/10/14 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16	U U 0.07 U 0.36 U 2.30 U U 0.05 U 0.06 2.00 U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.16 U 0.08 3.65 0.01 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 10 10 10 10 10 10	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 4/6/16	U U 0.07 U 0.36 U 2.30 U U 0.05 U 0.06 2.00 U U U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16 4/6/16 4/6/16	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.16 U 0.08 3.65 0.01 U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	Samples 10 10 10 10 33 10 33 10 10 33 10 10 33 10 10 10 10 10 10 10 10 10 10 10 10 10 10	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U U U 0.02	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 4/6/16 7/11/13	U U 0.07 U 0.36 U 2.30 U U 0.05 U 0.06 2.00 U U U U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16 4/6/16 3/23/11	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.16 U 0.08 3.65 0.01 U U U 0.02	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Potassium, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 10 10 10 10 33	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U U 0.02 3.10	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 11/10/14 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 4/6/16 7/11/13 1/27/16	U U 0.07 U 0.36 U 2.30 U U 0.05 U 0.06 2.00 U U U U U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16 4/6/16 3/23/11 1/2/11	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.08 3.65 0.01 U U U 0.02 0.87	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U U 0.02 3.10 U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 11/10/14 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 4/6/16 7/11/13 1/27/16 4/6/16	U U 0.07 U 0.36 U 2.30 U U U 0.05 U 0.06 2.00 U U U U U U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16 3/23/11 4/6/16 3/23/11 11/1/12 4/6/16	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.08 3.65 0.01 U U U 0.02 0.87 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 10 10 10 10 33 10 33 10 33	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U U 0.02 3.10 U 12.80	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 4/6/16 7/11/13 1/27/16 4/6/16 11/5/15	U U 0.07 U 0.36 U 2.30 U U U 0.05 U 0.06 2.00 U U U U U U U U U U U U U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16 3/23/11 1/1/1/2 4/6/16 3/23/17	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.08 3.65 0.01 U U U 0.02 0.87 U 11.81	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U U 0.02 3.10 U	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 11/10/14 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 4/6/16 7/11/13 1/27/16 4/6/16	U U 0.07 U 0.36 U 2.30 U U U 0.05 U 0.06 2.00 U U U U U U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16 3/23/11 4/6/16 3/23/11 11/1/12 4/6/16	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.08 3.65 0.01 U U U 0.02 0.87 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 10 10 10 10 33 10 33 10 33	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U U 0.02 3.10 U 12.80	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 4/6/16 7/11/13 1/27/16 4/6/16 11/5/15	U U 0.07 U 0.36 U 2.30 U U U 0.05 U 0.06 2.00 U U U U U U U U U U U U U U U	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 1/20/11 3/23/11 4/6/16 3/23/11 1/1/1/2 4/6/16 3/23/17	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.08 3.65 0.01 U U U 0.02 0.87 U 11.81	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Sodium, dissolved	Samples 10 10 10 10 33 10 33 10 33 10 33 10 33 10 10 10 10 10 10 10 10 10 33 10 33 10 33 33	0.05 U 0.36 0.00 1.29 U 4.90 U U 0.69 U 0.15 11.10 0.01 U U U 0.02 3.10 U 12.80 1,190.00	3/23/11 3/23/17 3/23/17 1/20/11 10/18/17 4/6/16 10/18/16 4/6/16 11/10/14 4/6/16 3/23/17 10/18/17 3/30/11 4/6/16 7/11/13 1/27/16 4/6/16 11/2/15 10/18/17	U U 0.07 U 0.36 U 2.30 U U U 0.05 U U 0.06 2.00 U U U U U U U U U U U U U U 10.60 279.00	11/5/15 11/29/12 1/20/11 10/4/11 4/6/16 11/30/11 4/6/16 3/23/11 4/6/16 1/20/11 3/23/11 4/6/16 3/23/11 4/6/16 3/23/11 11/1/12 4/6/16 3/23/17 6/14/11	0.04 U 0.14 0.00 0.49 U 3.00 U U 0.16 U 0.08 3.65 0.01 U U 0.02 0.87 U U 11.81 427.97	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 20: WSW-2 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 20



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples						
Bicarbonate as CaCO3	11	529.00	8/22/14	475.00	8/16/16	495.09	mg/l
Carbonate as CaCO3	11	72.70	8/27/15	26.70	4/6/16	54.06	mg/l
Total Alkalinity as	11	578.00	11/5/15	520.00	10/18/16	549.09	mg/l
Bromide	3	1.54	3/23/17	0.10	8/22/14	1.01	mg/l
Cation-Anion Balance	11	4.00	10/18/16	-4.00	8/22/14	-2.18	%
Sum of Anions	11	13.00	8/22/14	12.00	10/18/16	12.91	meq/l
Sum of Cations	11	13.00	11/5/15	12.00	8/22/14	12.36	meq/l
Chemical Oxygen	2	196.00	4/6/16	22.00	8/22/14	109.00	mg/l
Chloride	11	20.90	4/6/16	11.60	8/27/15	13.79	mg/l
Conductivity, Lab	11	1,250	4/6/16	1,100	8/16/16	1,176	µmho
Fluoride	11	19.80	8/22/14	16.50	4/6/16	18.36	mg/l
Hardness as CaCO3	11	16.00	8/22/14	12.00	6/27/17	13.40	mg/l
Nitrate as N, dissolved	1	0.09	8/22/14	0.09	8/22/14	0.09	mg/l
	1	0.25	8/22/14		8/22/14	0.09	
Nitrate/Nitrite as N,				0.25			mg/l
Nitrite as N, dissolved	1	0.16	8/22/14	0.16	8/22/14	0.16	mg/l
Nitrogen, Ammonia	4	0.52	11/5/15	0.43	4/6/16	0.46	<u>mg/l</u>
Nitrogen, Organic	2	0.40	8/22/14	0.40	8/22/14	0.40	<u>mg/l</u>
Nitrogen, Total Kjeldahl	4	0.80	8/22/14	0.40	3/23/17	0.63	mg/l
pH, lab	11	8.90	3/23/17	8.60	8/22/14	8.75	units
Phosphate, total	4	0.12	8/22/14	0.09	11/5/15	0.11	mg/l
Phosphorus, total	4	0.04	8/22/14	0.03	11/5/15	0.04	mg/l
SAR in Water	11	34.00	11/5/15	30.00	8/22/14	32.82	none
Sulfate	9	57.90	4/6/16	11.60	1/27/16	27.50	mg/l
Sulfide	4	2.20	4/6/16	0.16	8/22/14	1.13	mg/l
Total Dissolved Solids	11	745.00	4/6/16	661.00	8/27/15	684.00	mg/l
Conductivity, Field	26	1,492	6/20/17	1,146	5/18/16	1,190	µmho
pH, Field	26	8.90	3/16/16	7.60	4/6/16	8.33	units
Temperature (°C), Field	26	23.40	7/17/17	17.80	12/3/15	21.42	(°C)
Water Level, Field	N/A	N/A	N/A	N/A	N/A	N/A	Ft.
		, , , .	, / .				
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples						
Aluminum, dissolved	4	U	8/22/14	U	8/22/14	U	mg/l
Arsenic, dissolved	4	U	8/22/14	U	3/23/17	U	mg/l
Barium, dissolved	4	0.22	11/5/15	0.14	4/6/16	0.18	mg/l
Beryllium, dissolved	4	0.00	8/22/14	U	8/22/14	0.00	mg/l
Boron, dissolved	11	0.27	8/22/14	0.21	4/6/16	0.23	mg/l
Cadmium, dissolved	11						mg/l
	4	11	8/22/14		8/22/14		
	4	U 2 40	8/22/14	U 2 20	8/22/14	U 2.45	
Calcium, dissolved	11	3.40	8/22/14	2.20	3/23/17	2.45	mg/l
Calcium, dissolved Chromium, dissolved	11 4	3.40 U	8/22/14 8/22/14	2.20 U	3/23/17 8/22/14	2.45 U	mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved	11 4 4	3.40 U U	8/22/14 8/22/14 8/22/14	2.20 U U	3/23/17 8/22/14 8/22/14	2.45 U U	mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	11 4 4 4	3.40 U U 0.13	8/22/14 8/22/14 8/22/14 11/5/15	2.20 U U 0.05	3/23/17 8/22/14 8/22/14 3/23/17	2.45 U U 0.08	mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	11 4 4 4 4 4	3.40 U U 0.13 U	8/22/14 8/22/14 8/22/14 11/5/15 8/22/14	2.20 U U 0.05 U	3/23/17 8/22/14 8/22/14 3/23/17 8/22/14	2.45 U U 0.08 U	<u>mg/l</u> mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	11 4 4 4 4 4 4	3.40 U U 0.13 U 0.13	8/22/14 8/22/14 8/22/14 11/5/15 8/22/14 4/6/16	2.20 U U 0.05 U 0.06	3/23/17 8/22/14 8/22/14 3/23/17 8/22/14 8/22/14	2.45 U U 0.08 U 0.08	mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	11 4 4 4 4 4 4 11	3.40 U 0.13 U 0.13 1.90	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14	2.20 U U 0.05 U 0.06 1.60	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 8/22/14 6/27/17	2.45 U U 0.08 U 0.08 1.75	mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	11 4 4 4 4 4 4 11 4	3.40 U U 0.13 U 0.13 1.90 0.03	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14	2.20 U U 0.05 U 0.06 1.60 U	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 8/22/14 6/27/17 4/6/16	2.45 U U 0.08 U 0.08	mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	11 4 4 4 4 4 4 11 4 4	3.40 U U 0.13 U 0.13 1.90 0.03 U	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14	2.20 U U 0.05 U 0.06 1.60 U U	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14	2.45 U U 0.08 U 0.08 1.75 0.02 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	11 4 4 4 4 4 11 4 4 4 4 4	3.40 U U 0.13 U 0.13 1.90 0.03 U U	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14	2.20 U 0.05 U 0.06 1.60 U U U	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14 8/22/14	2.45 U U 0.08 U 0.08 1.75 0.02	mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	11 4 4 4 4 4 4 11 4 4	3.40 U U 0.13 U 0.13 1.90 0.03 U	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14	2.20 U U 0.05 U 0.06 1.60 U U	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14	2.45 U U 0.08 U 0.08 1.75 0.02 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	11 4 4 4 4 4 11 4 4 4 4 4	3.40 U U 0.13 U 0.13 1.90 0.03 U U U 0.01	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 8/22/14 4/6/16	2.20 U 0.05 U 0.06 1.60 U U U	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14 8/22/14 8/22/14	2.45 U U 0.08 U 0.08 1.75 0.02 U U U 0.01	<u>mg/l</u> mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	11 4 4 4 4 11 4 4 4 4 4 4 4 11	3.40 U U 0.13 U 0.13 1.90 0.03 U U	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 8/22/14 4/6/16 4/6/16	2.20 U 0.05 U 0.06 1.60 U U U U U	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 10/18/16	2.45 U U 0.08 U 0.08 1.75 0.02 U U	<u>mg/l</u> mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	11 4 4 4 4 11 4 4 4 4 4 4 4 11 4	3.40 U U 0.13 U 0.13 1.90 0.03 U U U 0.01 29.20 U	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 8/22/14 4/6/16 4/6/16 8/22/14	2.20 U U 0.05 U 0.06 1.60 U U U U U U U U U U U	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 10/18/16 8/22/14	2.45 U U 0.08 U 0.08 1.75 0.02 U U U 0.01 3.26 U	<u>mg/l</u> mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved Selenium, dissolved Silica, dissolved	11 4 4 4 4 11 4 4 4 4 4 4 11 4 11	3.40 U U 0.13 U 0.13 1.90 0.03 U U U 0.01 29.20 U 12.80	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 8/22/14 4/6/16 4/6/16 8/22/14 8/22/14	2.20 U U 0.05 U 0.06 1.60 U U U U U U U U U U U U 11.30	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 10/18/16 8/22/14 4/6/16	2.45 U U 0.08 U 0.08 1.75 0.02 U U U 0.01 3.26 U 12.19	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved Selenium, dissolved Silica, dissolved	$ \begin{array}{c} 11 \\ 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ 11 \\ 4 \\ 4 \\ 4 \\ 11 \\ 4 \\ 11 \\ 4 \\ 11 \\ 11$	3.40 U U 0.13 U 0.13 1.90 0.03 U U 0.01 29.20 U 12.80 280.00	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14	2.20 U U 0.05 U 0.06 1.60 U U U U U U U U U U U 11.30 259.00	3/23/17 8/22/14 8/22/14 3/23/17 8/22/14 6/27/17 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 10/18/16 8/22/14 4/6/16 8/27/15	2.45 U U 0.08 U 0.08 1.75 0.02 U U U 0.01 3.26 U 12.19 271.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved Selenium, dissolved Silica, dissolved	11 4 4 4 4 11 4 4 4 4 4 4 11 4 11	3.40 U U 0.13 U 0.13 1.90 0.03 U U U 0.01 29.20 U 12.80	8/22/14 8/22/14 11/5/15 8/22/14 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 8/22/14 4/6/16 4/6/16 8/22/14 8/22/14	2.20 U U 0.05 U 0.06 1.60 U U U U U U U U U U U U 11.30	3/23/17 8/22/14 3/23/17 8/22/14 8/22/14 6/27/17 4/6/16 8/22/14 8/22/14 8/22/14 8/22/14 10/18/16 8/22/14 4/6/16	2.45 U U 0.08 U 0.08 1.75 0.02 U U U 0.01 3.26 U 12.19	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 21: WSW-3 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 2013 TANK BODY TOWN

Zinc, dissolved

4

U

8/22/14 8/22/14

mg/l

8/22/14 8/22/14

U

U



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	5		-		J	
Bicarbonate as CaCO3	12	507.00	4/6/16	439.00	8/27/15	471.33	mg/l
Carbonate as CaCO3	13	537.00	9/25/14	49.00	10/18/16	99.69	mg/l
Total Alkalinity as	13	925.00	9/25/14	511.00	6/9/15	564.54	mg/l
Bromide	1	0.09	8/25/14	0.09	8/25/14	0.09	mg/l
Cation-Anion Balance	12	0.00	6/9/15	-7.30	9/25/14	-2.89	%
Sum of Anions	13	22.00	9/25/14	13.00	6/9/15	13.85	meq/l
Sum of Cations	13	19.00	9/25/14	12.00	8/27/15	13.08	meq/l
Chemical Oxygen	3	53.00	8/25/14	13.00	4/6/16	35.33	mg/l
Chloride	13	25.00	9/25/14	15.30	8/10/17	19.08	mg/l
Conductivity, Lab	13	2,810	9/25/14	1,130	4/6/16	1,351	µmhos
Fluoride	13	19.20	4/6/16	5.11	9/25/14	15.78	mg/l
Hardness as CaCO3	13	17.00	9/25/14	12.00	10/18/16	13.33	mg/l
Nitrate as N, dissolved	1	0.03	8/25/14	U	4/6/16	0.03	mg/l
Nitrate/Nitrite as N,	1	0.08	8/25/14	Ŭ	4/6/16	0.08	mg/l
Nitrite as N, dissolved	2	0.05	8/25/14	0.01	9/25/14	0.03	mg/l
Nitrogen, Ammonia	5	2.28	9/25/14	0.46	3/23/17	0.85	mg/l
Nitrogen, Organic	3	0.30	8/25/14	U	9/25/14	0.20	mg/l
Nitrogen, Total Kjeldahl	5	1.00	9/25/14	0.30	3/23/14	0.20	mg/l
pH, lab	13	11.70	9/25/14	8.70	10/18/16	9.04	units
Phosphate, total	5	0.28	9/25/14	0.09	8/25/14	0.13	mg/l
Phosphorus, total	5	0.09	9/25/14	0.03	8/25/14	0.13	mg/l
SAR in Water	13	44.00	9/25/14	32.00	8/25/14	35.00	
Sulfate	13	130.00	9/25/14	20.00	4/6/16	59.99	<u>none</u> mg/l
Sulfide	5	3.60	3/23/14	0.10	9/25/14	1.88	
Total Dissolved Solids	13	1,210.00	9/25/14	700.00	8/27/15		mg/l
Conductivity, Field	27	1,530	6/20/17	1,073	4/6/16	752.62 1,244	mg/l
pH, Field	27	8.90	3/16/16	7.70	8/27/15	8.42	<u>µmhos</u>
Temperature (°C), Field	27	29.00	6/20/16	13.80	4/19/17	21.01	<u>units</u> (°C)
	N/A						
Water Level, Field	IN/A	N/A	N/A	N/A	N/A	N/A	Ft.
Parameters	No. of	High	Date	Low	Date	Average	Units
		підп	Dale	LOW	Date	Average	Units
Metals Aluminum, dissolved	Samples	0.42	9/25/14	U	9/25/14	0.42	m a/l
	6			-			mg/l
Arsenic, dissolved	5	0.01	9/25/14	U	4/6/16	0.0032	<u>mg/l</u>
Barium, dissolved	5	0.23	4/6/16	0.02	9/25/14	0.10	mg/l
Beryllium, dissolved	5	U	4/6/16	U	4/6/16	U	mg/l
Boron, dissolved	13	0.44	9/25/14	0.18	8/27/15	0.22	<u>mg/l</u>
Cadmium, dissolved	5	U	4/6/16	U	4/6/16	U	<u>mg/l</u>
Calcium, dissolved	13	6.40	9/25/14	1.90	3/23/17	2.49	<u>mg/l</u>
Chromium, dissolved	5	U	4/6/16	U	4/6/16	U	mg/l
Copper, dissolved	5	U	4/6/16	U	4/6/16	U	mg/l
Iron, dissolved	5	0.27	8/25/14	0.02	3/23/17	0.12	mg/l
Lead, dissolved	5	U	4/6/16	U	4/6/16	U	mg/l
Lithium, dissolved	5	0.13	11/5/15	0.07	4/6/16	0.10	mg/l
Magnesium, dissolved	13	2.00	8/27/15	0.30	9/25/14	1.72	mg/l
Manganese, dissolved	5	U	4/6/16	U	4/6/16	U	mg/l
Mercury, dissolved	5	U	4/6/16	U	4/6/16	U	mg/l
Molybdenum, dissolved	5	U	9/25/14	U	9/25/14	U	mg/l
Nickel, dissolved	5	0.00	8/25/14	U	8/25/14	0.00	mg/l
Potassium, dissolved	13	18.30	9/25/14	U	8/16/16	2.31	mg/l
Selenium, dissolved	5	U	3/23/17	U	3/23/17	U	mg/l
- · · · · · · · ·	10	470.00	0/05/44	40.00	0/00/47	01.05	/1
Silica, dissolved	13	172.00	9/25/14	10.90	3/23/17	24.05	mg/l

Table 22: WSW-4 Annual A-Groove Aquifer

DAUB & ASSOCIATES, INC. 20, 38 Sarra Carlo Dallanda

13

13

5

5

Sodium, dissolved

Strontium, dissolved

Vanadium, dissolved

Zinc, dissolved

mg/l

mg/l

mg/l

mg/l

289.92

0.42

U

U

9/25/14

4/6/16

4/6/16

9/25/14

266.00

0.39

U

U

10/18/17

9/25/14

4/6/16 9/25/14

416.00

0.53

U

U



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	ingn	Dute	LOW	Dute	Average	Onito
Bicarbonate as CaCO3	171	762.00	3/25/94	144.00	7/30/90	609.51	mg/l
Carbonate as CaCO3	171	406.00	5/21/97	25.00	7/1/97	100.43	mg/l
Total Alkalinity as	171	830.00	7/31/91	200.00	7/30/90	710.12	mg/l
Bromide	27	10.00	6/26/91	0.06	7/1/97	1.15	mg/l
Cation-Anion Balance	166	24.10	4/16/02	-9.10	6/14/17	0.15	%
Sum of Anions	165	18.00	6/14/17	4.29	7/30/90	15.66	meq/l
Sum of Cations	165	18.20	4/11/06	4.38	7/30/90	15.51	meq/l
Chemical Oxygen	29	420.00	6/25/07	30.00	3/30/90	81.07	mg/l
Chloride	170	70.50	6/14/17	6.00	9/27/90	15.50	mg/l
Conductivity, Lab	163	1,850.00	4/24/91	1,000.00	5/20/93	1,390.05	µmhos
Fluoride	165	38.20	2/24/92	0.20	9/29/94	23.84	mg/l
Hardness as CaCO3	169	65.00	9/27/90	U.20	7/30/90	11.22	mg/l
Nitrate as N, dissolved	29	16.50	6/25/07	0.02	6/26/91	1.01	mg/l
Nitrate/Nitrite as N,	29	17.00	6/25/07	0.02	6/26/91	1.07	mg/l
Nitrite as N, dissolved	30	0.55	6/25/07	0.02	3/30/90	0.13	mg/l
Nitrogen, Ammonia	29	7.48	6/25/07	0.06	7/30/90	1.59	mg/l
Nitrogen, Organic	28	29.10	6/26/91	0.00	6/15/92	5.18	mg/l
Nitrogen, Total Kjeldahl	29	30.10	6/26/91	0.80	6/15/92	6.65	mg/l
pH, lab	166	9.80	12/20/94	8.10	10/28/02	8.89	units
Phosphate, total	25	155.00	6/25/07	0.06	7/18/95	14.00	mg/l
Phosphorus, total	30	2.90	9/27/90	0.02	7/2/98	0.16	mg/l
SAR in Water	141	158.62	6/26/90	16.50	9/27/90	48.44	none
Sulfate	169	140.00	10/25/90	U	8/16/17	20.49	mg/l
Sulfide	25	2.10	7/30/90	0.02	7/27/01	0.45	mg/l
Total Dissolved Solids	171	1,100.00	10/21/89	446.00	7/30/90	866.73	mg/l
Conductivity, Field	188	1,683.00	6/5/12	925.00	8/2/06	1,337.90	µmhos
pH, Field	188	10.12	7/29/09	7.60	3/10/15	9.06	units
Temperature (°C), Field							(°C)
	94	19.00	7/31/91	760	4/1/06	1 12.00	
	94 78	<u>19.00</u> 500.70	7/31/91	7.60	4/1/06	12.38 472 73	
Water Level, Field	94 78	500.70	6/25/14	432.37	4/1/06 6/25/14	472.73	Ft.
Water Level, Field	78	500.70	6/25/14	432.37	6/25/14	472.73	Ft.
Water Level, Field Parameters	78 No. of						
Water Level, Field Parameters Metals	78 No. of Samples	500.70 High	6/25/14 Date	432.37	6/25/14 Date	472.73 Average	Ft. Units
Water Level, Field Parameters Metals Aluminum, dissolved	78 No. of Samples 29	500.70 High 1.54	6/25/14 Date 3/30/90	432.37	6/25/14 Date 7/1/97	472.73 Average 0.24	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved	78 No. of Samples 29 29	500.70 High 1.54 0.30	6/25/14 Date 3/30/90 10/21/89	432.37 Low U U	6/25/14 Date 7/1/97 12/3/12	472.73 Average 0.24 0.02	Ft. Units mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	78 No. of <u>Samples</u> 29 29 29	500.70 High 1.54 0.30 0.43	6/25/14 Date 3/30/90 10/21/89 8/2/06	432.37 Low U U 0.02	6/25/14 Date 7/1/97 12/3/12 7/15/04	472.73 Average 0.24 0.02 0.19	Ft. Units mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	78 No. of Samples 29 29 29 29 29 28	500.70 High 1.54 0.30 0.43 0.01	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91	432.37 Low U U 0.02 U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91	472.73 Average 0.24 0.02 0.19 0.01	Ft. Units mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	78 No. of 29 29 29 29 29 28 166	500.70 High 1.54 0.30 0.43 0.01 3.30	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91	432.37 Low U U 0.02 U 0.35	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04	472.73 Average 0.24 0.02 0.19 0.01 0.68	Ft. Units mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	78 No. of Samples 29 29 29 29 29 28 166 28	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89	432.37 Low U U 0.02 U 0.35 U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01	Ft. Units mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	78 No. of Samples 29 29 29 29 28 166 28 163	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90	432.37 Low U U 0.02 U 0.35 U 0.50	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	78 No. of Samples 29 29 29 29 28 166 28 163 28	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91	432.37 Low U U 0.02 U 0.35 U 0.50 U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 163 28 29	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 0.02	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.01	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 163 28 29 29 29	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U U U U U U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.01 0.13	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 163 28 29 29 29 29 29	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93 0.10	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.01 0.13 0.06	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 28 29 29 29 29 29 28 28 28	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93 0.10 0.20	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U U U U U U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91 3/30/90	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.01 0.13 0.06 0.13	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 29 29 29 29 29 29 29 28 28 29 29 29 28 28 165	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90 9/27/90	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U U U U U U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91 3/30/90 3/16/10	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.01 0.13 0.06 0.13 1.38	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 29 29 29 29 29 29 28 28 28 28 28 28 28 28	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90 9/27/90 6/25/07	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U U U U U U	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.13 0.06 0.13 1.38 0.03	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 29 29 29 29 29 28 28 28 28 28 165 28 28 28 29	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90 9/27/90 6/25/07 6/25/07 6/15/92	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U U U 0.01 0.001	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.13 0.06 0.13 1.38 0.03 0.0005	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 29 29 29 29 29 28 28 28 165 28 28 28 29 29 28 28 28 28 28 28 28 28 29 28	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010 0.60	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90 6/25/07 6/15/92 10/21/89	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U 0.01 0.001 0.01	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 7/27/01	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.01 0.13 0.06 0.13 1.38 0.03 0.0005 0.14	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 29 29 29 29 29 28 28 28 28 29 29 29 29 28 28 28 29 28 28 29 28 28 29 28 29 28 29 28 29 28 29 29 28 29 29 29 29 29 29 29 29 29 29 29 29 29	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010 0.60 0.03	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90 6/25/07 6/15/92 10/21/89 10/21/89	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U 0.01 0.01 0.01 0.01	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 7/27/01 12/3/12	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.13 0.06 0.13 1.38 0.03 0.0005 0.14 0.02	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 29 29 29 29 29 29 28 28 29 29 29 29 29 28 28 29 29 28 28 29 28 28 29 28 29 28 28 29 28 28 29 28 29 29 28 29 29 29 29 29 29 29 29 29 29 29 29 29	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010 0.60 0.03 13.00	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90 6/25/07 6/15/92 10/21/89 10/21/89 3/25/91	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U 0.01 0.01 0.01 0.01 0.01 0.70	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 7/27/01 12/3/12 4/27/04	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.13 0.06 0.13 1.38 0.03 0.0005 0.14 0.02 1.30	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved Selenium, dissolved	78 No. of Samples 29 29 29 28 166 28 163 28 29 29 29 29 29 28 28 29 29 29 29 28 28 29 29 28 28 29 29 28 28 29 29 28 28 29 28 29 29 28 29 29 29 29 29 29 29 29 29 29 29 29 29	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010 0.60 0.03 13.00 0.001	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 12/27/90 6/25/07 6/15/92 10/21/89 10/21/89 3/25/91 10/21/89	432.37 Low U U U 0.02 U 0.35 U 0.50 U U U U U U U U 0.01 0.01 0.01 0.01 0.01 0.70 0.001	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 7/27/01 12/3/12 4/27/04 10/21/89	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.13 0.06 0.13 1.38 0.03 0.0005 0.14 0.02 1.30 0.001	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	78 No. of 29 29 29 29 28 166 28 29 28 163 28 29 29 28 29 29 28 29 28 29 28 29 28 29 165 29 165 29 165 29 165 29 165 29 165 29 166	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010 0.60 0.03 13.00 0.001 35.90	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 10/21/89 10/21/89 10/21/89 10/21/89 10/21/89	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.02	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 3/16/10 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 7/27/01 12/3/12 4/27/04 10/21/89 1/21/92	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.13 0.06 0.13 1.38 0.03 0.0005 0.14 0.02 1.30 0.001 17.57	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Sodium, dissolved	No. of Samples 29 29 29 29 28 166 28 29 28 163 28 29 29 28 29 29 28 29 28 29 28 29 28 29 165 29 165 29 165 29 165 29 165 29 166 166	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010 0.60 0.03 13.00 0.001 35.90 408.00	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 10/21/80 10/21/80 10/8 10/8 10/8 10/8 10/8 10/8 10	432.37 Low U U U 0.02 U 0.35 U 0.50 U U U U U U U U 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.02 0.02 0.35 0.02 0.01 0.01 0.01 0.02 0.01 0.02 0.01 0.02 0.01 0.02 0.01 0.02 0.01 0.02 0.02 0.02 0.02 0.01 0.02 0.01 0.02 0.02 0.02 0.02 0.02 0.01 0.02 0.	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 3/16/10 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 7/27/01 12/3/12 4/27/04 10/21/89 1/21/92 12/27/90	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.13 0.06 0.13 1.38 0.03 0.0005 0.14 0.02 1.30 0.001 17.57 350.18	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	78 No. of 29 29 29 29 28 166 28 29 28 163 28 29 29 28 29 29 28 29 28 29 28 29 28 29 165 29 165 29 165 29 165 29 165 29 165 29 166	500.70 High 1.54 0.30 0.43 0.01 3.30 0.01 13.00 0.01 0.02 0.93 0.10 0.20 8.00 0.07 0.0010 0.60 0.03 13.00 0.001 35.90	6/25/14 Date 3/30/90 10/21/89 8/2/06 6/26/91 3/25/91 10/21/89 9/27/90 6/26/91 6/25/07 3/30/90 10/21/89 10/21/89 10/21/89 10/21/89 10/21/89 10/21/89	432.37 Low U U 0.02 U 0.35 U 0.50 U U U U U U U U 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.02	6/25/14 Date 7/1/97 12/3/12 7/15/04 6/26/91 1/27/04 10/21/89 3/16/10 6/26/91 3/30/90 3/16/10 7/7/99 6/26/91 3/30/90 3/16/10 7/1/97 6/26/91 7/27/01 12/3/12 4/27/04 10/21/89 1/21/92	472.73 Average 0.24 0.02 0.19 0.01 0.68 0.01 2.32 0.01 0.13 0.06 0.13 1.38 0.03 0.0005 0.14 0.02 1.30 0.001 17.57	Ft. Units mg/l

Table 23: 89-1 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC. 2013 A TANK WE DO DO DO



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	ingn	Date	LOW	Date	Average	Onits
Bicarbonate as CaCO3	110	1,790.00	9/14/04	419.00	3/23/05	772.29	mg/l
Carbonate as CaCO3	110	419.00	3/23/05	4.00	6/16/97	87.71	mg/l
Total Alkalinity as	110	1,790.00	9/14/04	680.00	6/15/14	856.04	mg/l
Bromide	13	1.50	7/21/92	0.10	1/29/91	0.44	
	109						mg/l
Cation-Anion Balance		36.90	8/10/08	-33.50	9/14/04	-1.44	%
Sum of Anions	100	37.50	9/14/04	15.00	6/26/02	18.92	meq/l
Sum of Cations	100	39.50	8/10/08	11.10	11/23/10	18.26	meq/l
Chemical Oxygen	20	210.00	9/15/07	10.00	8/14/95	75.00	mg/l
Chloride	110	293.00	6/14/08	10.00	9/24/03	22.18	mg/l
Conductivity, Lab	107	2,200.00	5/16/07	1,280.00	7/21/92	1,588.17	µmhos
Fluoride	110	98.00	3/24/99	9.00	12/11/01	23.17	mg/l
Hardness as CaCO3	106	42.00	4/20/92	1.00	10/25/90	14.67	mg/l
Nitrate as N, dissolved	25	0.27	6/24/04	0.04	1/29/91	0.11	mg/l
Nitrate/Nitrite as N,	25	0.27	6/24/04	0.05	1/29/91	0.12	mg/l
Nitrite as N, dissolved	25	0.03	8/16/94	0.01	1/29/91	0.02	mg/l
Nitrogen, Ammonia	24	10.90	8/16/96	0.83	6/28/06	1.66	mg/l
Nitrogen, Organic	24	12.00	9/15/07	0.20	1/29/91	3.70	mg/l
Nitrogen, Total Kjeldahl	24	13.00	9/15/07	0.50	8/14/95	4.37	mg/l
pH, lab	107	9.00	4/24/91	7.40	6/16/97	8.68	units
Phosphate, total	20	155.00	6/28/06	0.09	8/10/08	8.70	mg/l
Phosphorus, total	23	3.63	8/1/90	0.02	6/28/06	0.29	mg/l
SAR in Water	101	198.04	10/25/90	0.02	4/24/91	49.04	none
Sulfate	66	333.00	1/20/92	0.00	5/16/17	45.32	mg/l
Sulfide	18	6.21	8/1/90	0.00	6/28/06	0.76	mg/l
	108	1,490.00			11/23/10		
Total Dissolved Solids			8/10/08	813.00		1,017.69	mg/l
Conductivity, Field	168	2,200.00	5/16/07	1,135.00	6/16/97	1,545.26	µmhos
pH, Field	168	10.60	12/16/02	7.40	8/26/15	8.72	units
Temperature (°C), Field	109	19.70	5/1/02	8.00	12/1/04	12.30	(°C)
			0/4 4/4 4	F07 00	4/4 = /4 0		– (
Water Level, Field	90	547.40	6/14/11	507.30	1/15/16	530.54	Ft.
						-	
Parameters	No. of	547.40 High	6/14/11 Date	507.30 Low	1/15/16 Date	530.54 Average	Ft. Units
Parameters Metals	No. of Samples	High	Date	Low	Date	Average	Units
Parameters Metals Aluminum, dissolved	No. of Samples 25	High 9.47	Date 6/16/97	Low	Date 6/14/00	Average	Units mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved	No. of Samples 25 25	High 9.47 0.0180	Date 6/16/97 8/1/90	Low 0.04 0.0003	Date 6/14/00 11/27/12	Average 1.73 0.0035	Units mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 25 25 25 25	High 9.47 0.0180 0.96	Date 6/16/97 8/1/90 6/16/97	Low 0.04 0.0003 0.03	Date 6/14/00 11/27/12 8/8/90	Average 1.73 0.0035 0.36	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 25 25 25 25 25 25	High 9.47 0.0180 0.96 U	Date 6/16/97 8/1/90 6/16/97 11/27/12	Low 0.04 0.0003 0.03 U	Date 6/14/00 11/27/12 8/8/90 11/27/12	Average 1.73 0.0035 0.36 U	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 25 25 25 25 25 25 111	High 9.47 0.0180 0.96	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04	Low 0.04 0.0003 0.03	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94	Average 1.73 0.0035 0.36	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 25 25 25 25 25 25	High 9.47 0.0180 0.96 U	Date 6/16/97 8/1/90 6/16/97 11/27/12	Low 0.04 0.0003 0.03 U	Date 6/14/00 11/27/12 8/8/90 11/27/12	Average 1.73 0.0035 0.36 U	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	No. of Samples 25 25 25 25 25 25 111	High 9.47 0.0180 0.96 U 0.93	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04	Low 0.04 0.0003 0.03 U 0.31	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94	Average 1.73 0.0035 0.36 U 0.72	Units mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	No. of Samples 25 25 25 25 25 111 25 111	High 9.47 0.0180 0.96 U 0.93 0.03	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93	Low 0.04 0.0003 0.03 U 0.31 U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08	Average 1.73 0.0035 0.36 U 0.72 0.03	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16	Low 0.04 0.0003 0.03 U 0.31 U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 111 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 111 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 24	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/9/99	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U 0.04	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 25 24 111	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/9/99 10/30/91	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 25 24 111 24	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/9/99 10/30/91 6/16/97	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 25 24 111 24 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/9/99 10/30/91 6/16/97 7/31/91	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 25 25 25 25 25 111 25 111 25 25 25 25 25 25 25 24 111 24 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/9/99 10/30/91 6/16/97 7/31/91 8/1/90	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	No. of Samples 25 25 25 25 25 111 25 25 25 25 25 25 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14 0.02	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/9/99 10/30/91 6/16/97 7/31/91 8/1/90 1/29/91	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96 9/21/10	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07 0.02	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	No. of 25 25 25 25 25 111 25 111 25 25 25 25 25 24 111 24 25 25 25 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14 0.02 12.00	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/9/99 10/30/91 6/16/97 7/31/91 8/1/90 1/29/91 7/31/91	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96 9/21/10 5/23/94	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07 0.02 1.74	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	No. of Samples 25 25 25 25 25 111 25 25 25 25 25 25 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14 0.02 12.00 0.001	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/9/99 10/30/91 6/16/97 7/31/91 8/1/90 1/29/91 7/31/91 8/8/90	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96 9/21/10 5/23/94 8/8/90	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07 0.02 1.74 0.001	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	No. of Samples 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14 0.02 12.00 0.001 122.00	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 7/31/91 8/1/90 1/29/91 7/31/91 8/8/90 10/30/91	Low 0.04 0.0003 0.03 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96 9/21/10 5/23/94 8/8/90 4/24/91	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07 0.02 1.74 0.001 20.21	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Solium, dissolved	No. of Samples 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14 0.02 12.00 0.001 122.00 882.00	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 7/31/91 8/1/90 1/29/91 7/31/91 8/8/90 10/30/91 8/10/08	Low 0.04 0.0003 0.3 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96 9/21/10 5/23/94 8/8/90 4/24/91 11/23/10	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07 0.02 1.74 0.001 20.21 410.05	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	No. of Samples 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14 0.02 12.00 0.001 122.00 882.00 1.30	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 7/31/91 8/1/90 1/29/91 7/31/91 8/8/90 10/30/91 8/10/08 4/20/92	Low 0.04 0.0003 0.3 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96 9/21/10 5/23/94 8/8/90 4/24/91 11/23/10 6/14/00	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07 0.02 1.74 0.001 20.21 410.05 0.67	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Solium, dissolved	No. of Samples 25 25 25 25 111 25 111 25 25 25 25 25 25 25 25 25 25 25 25 25	High 9.47 0.0180 0.96 U 0.93 0.03 7.00 U 0.40 12.10 0.07 0.15 8.00 0.08 0.02 0.14 0.02 12.00 0.001 122.00 882.00	Date 6/16/97 8/1/90 6/16/97 11/27/12 3/18/04 7/21/93 4/20/92 11/27/16 7/31/91 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 6/16/97 7/31/91 8/1/90 1/29/91 7/31/91 8/8/90 10/30/91 8/10/08	Low 0.04 0.0003 0.3 U 0.31 U U U U U U U U U U U U U	Date 6/14/00 11/27/12 8/8/90 11/27/12 2/21/94 7/21/93 12/12/08 11/27/16 6/24/04 6/16/05 7/21/92 7/21/93 12/12/08 6/28/06 8/14/95 8/16/96 9/21/10 5/23/94 8/8/90 4/24/91 11/23/10	Average 1.73 0.0035 0.36 U 0.72 0.03 2.38 U 0.21 1.65 0.06 0.13 2.21 0.02 0.01 0.07 0.02 1.74 0.001 20.21 410.05	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 24: 90-3 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC. 20 W Stranger



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	ingn	Date	LOW	Date	Average	Units
Bicarbonate as CaCO3	127	1,010.00	8/7/97	283.00	2/16/07	641.13	mg/l
Carbonate as CaCO3	127	581.00	8/21/03	8.00	5/26/00	128.69	mg/l
	127	1,160.00	8/21/03	364.00	2/16/07	765.61	
Total Alkalinity as							mg/l
Bromide	18	3.00	9/2/98	0.10	5/18/06	0.49	mg/l
Cation-Anion Balance	127	42.30	3/17/09	-36.30	8/7/97	-1.34	%
Sum of Anions	127	30.80	8/7/97	9.10	2/16/07	17.31	meq/l
Sum of Cations	127	43.20	3/17/09	6.70	2/16/07	16.89	meq/l
Chemical Oxygen	15	470.00	8/25/05	10.00	9/14/00	148.00	mg/l
Chloride	127	249.00	8/7/97	U	11/18/06	24.80	mg/l
Conductivity, Lab	127	3,980.00	8/7/97	769.00	2/16/07	1,504.39	µmhos
Fluoride	127	56.00	3/25/98	12.80	6/14/08	24.11	mg/l
Hardness as CaCO3	126	48.00	4/19/01	1.00	2/16/07	11.44	mg/l
Nitrate as N, dissolved	18	0.53	9/25/02	0.03	8/30/08	0.20	mg/l
Nitrate/Nitrite as N,	18	0.53	9/25/02	0.02	5/18/06	0.17	mg/l
Nitrite as N, dissolved	18	0.02	5/18/06	0.02	5/18/06	0.02	mg/l
Nitrogen, Ammonia	16	5.00	9/29/97	0.72	9/29/06	1.87	mg/l
Nitrogen, Organic	16	28.00	9/25/02	0.30	9/22/99	8.02	mg/l
Nitrogen, Total Kjeldahl	16	28.00	9/25/02	1.40	9/15/97	9.79	mg/l
pH, lab	126	9.60	7/29/09	7.00	12/12/08	8.92	units
Phosphate, total	14	155.00	5/18/06	0.08	9/15/97	24.26	mg/l
Phosphorus, total	14	0.51	9/24/03	0.03	<u> </u>	0.13	mg/l
SAR in Water	126	148.00	11/23/10	19.80	4/19/01	57.94	
SAR III Water	120	70.00	10/30/03	0.70	11/20/00	12.83	none ma/l
							mg/l
Sulfide	14	1.50	9/24/03	0.03	9/29/06	0.33	mg/l
Total Dissolved Solids	127	1,510.00	3/17/09	453.00	2/16/07	938.02	mg/l
Conductivity, Field	141	3,980.00	8/7/97	1,310.00	2/8/00	1,526.10	µmhos
pH, Field	141	10.69	7/29/09	6.35	8/30/08	8.93	units
Temperature (°C), Field	93	16.20	6/1/07	8.60	12/1/03	12.50	(°C)
Water Level, Field	92	539.90	3/20/15	493.67	7/1/01	521.31	Ft.
			3/20/15			-	
Parameters	No. of	539.90 High		493.67 Low	7/1/01 Date	521.31 Average	Ft. Units
Parameters Metals	No. of Samples	High	3/20/15 Date	Low	Date	Average	Units
Parameters Metals Aluminum, dissolved	No. of Samples	High 7.96	3/20/15 Date 9/25/02	Low	Date 11/16/07	Average	Units mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved	No. of Samples 18 18	High 7.96 0.0020	3/20/15 Date 9/25/02 9/29/97	Low	Date 11/16/07 11/27/12	Average	Units mg/l mg/l
Parameters Metals Aluminum, dissolved	No. of Samples	High 7.96	3/20/15 Date 9/25/02	Low	Date 11/16/07	Average	Units mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 18 18 18 18	High 7.96 0.0020	3/20/15 Date 9/25/02 9/29/97	Low 0.03 0.0002	Date 11/16/07 11/27/12	Average 1.06 0.0009	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 18 18 18 18 18	High 7.96 0.0020 1.26 U	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12	Low 0.03 0.0002 0.13 U	Date 11/16/07 11/27/12 9/29/06 11/27/12	Average 1.06 0.0009 0.31 U	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	No. of Samples 18 18 18 18 18 18 126	High 7.96 0.0020 1.26	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09	Low 0.03 0.0002 0.13 U 0.22	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01	Average 1.06 0.0009 0.31 U 0.83	Units mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	No. of Samples 18 18 18 18 18 126 18	High 7.96 0.0020 1.26 U 1.67 U	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12	Low 0.03 0.0002 0.13 U 0.22 U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12	Average 1.06 0.0009 0.31 U 0.83 U	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	No. of Samples 18 18 18 18 18 126 18 125	High 7.96 0.0020 1.26 U 1.67 U 8.80	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08	Low 0.03 0.0002 0.13 U 0.22 U 0.20	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10	Average 1.06 0.0009 0.31 U 0.83 U 2.31	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	No. of Samples 18 18 18 18 126 18 126 18 125 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	No. of Samples 18 18 18 18 126 18 126 18 125 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U U U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	No. of Samples 18 18 18 18 126 18 125 18 125 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.20 U U 0.03	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	No. of Samples 18 18 18 18 126 18 125 18 125 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.20 U U 0.03 U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	No. of Samples 18 18 18 18 126 18 125 18 125 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.20 U 0.3 U 0.03 U 0.12	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/29/98 4/19/01	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.03 U 0.12 0.20	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/2/98 4/19/01 9/25/02	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U 0.20 U 0.03 U 0.12 0.20 U U 0.12 0.20 U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18 U	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U 0.03 U 0.12 0.20 U 0.12 0.20 U U U U 0.12 0.20 U U 0.13	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/29/8	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18 U 0.06	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/29/97	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U 0.03 U 0.12 0.20 U 0.12 0.20 U U U U U U U U U U U U U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/298 9/14/04	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 18 125 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18 U 0.06 0.05	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/29/98 4/19/01 9/25/02 9/29/97 9/29/06	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U 0.03 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U U 0.12 0.20 U U U U U U U U U U U U U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/29/8 9/14/04 9/25/02	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03 0.03	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Potassium, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 125 17 17 18 18 18 125 17 18 18 125 17 18 18 125	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18 U 0.06 0.05 12.00	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/29/98 4/19/01 9/25/02 9/29/97 9/29/06 8/7/97	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.03 U 0.12 0.20 U 0.12 0.20 U U U U U U U 1.20	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/29/8 9/14/04 9/25/02 6/14/01	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 125 17 17 18 18 18 125 17 17 18 18 18 125 17 18 18 18 18 18 18 18 125 17 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.88 0.20 9.40 0.18 U 0.06 0.05 12.00 U	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/29/98 4/19/01 9/25/02 9/29/97 9/29/06 8/7/97 11/27/12	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U 0.20 U 0.12 0.20 U 0.12 0.20 U U 0.12 0.20 U 0.12 0.20 U 0.13 U 0.22 U 0.20 U 0.22 U 0.22 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U 0.20 U U 0.20 U U U U U U U U U U U U U	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/29/06 9/14/00 9/2/98 9/14/04 9/25/02 6/14/01 11/27/12	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03 0.03 3.08 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 125 17 17 18 18 18 125 17 18 18 125 17 18 18 125	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18 U 0.06 0.05 12.00	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/29/98 4/19/01 9/25/02 9/29/97 9/29/06 8/7/97	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.03 U 0.12 0.20 U 0.12 0.20 U U U U U U U 1.20	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/29/8 9/14/04 9/25/02 6/14/01	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03 0.03 3.08	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 125 17 17 18 18 18 125 17 17 18 18 18 125 17 18 18 18 18 18 18 18 125 17 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.88 0.20 9.40 0.18 U 0.06 0.05 12.00 U	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/25/02 9/29/98 4/19/01 9/25/02 9/29/97 9/29/06 8/7/97 11/27/12	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U 0.20 U 0.12 0.20 U 0.12 0.20 U U 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.12 0.12 0.12 0.12 0.12 0.13 U 0.13 0 0.22 U 0 0.22 U 0 0.22 U 0 0.22 U 0 0.22 U 0 0.22 U 0 0 0 0 0 0 0 0 0 0 0 0 0	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/29/06 9/14/00 9/2/98 9/14/04 9/25/02 6/14/01 11/27/12	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03 0.03 3.08 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Solium, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 18 125 17 17 18 18 18 125 17 17 18 18 18 125 17 18 18 125 17 18 127 127	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18 U 0.06 0.05 12.00 U 50.20 973.00	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/29/97 9/29/98 9/29/97 9/29/06 8/7/97 11/27/12 9/25/02 3/17/09	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.20 U 0.3 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.13 U 0.22 U 0.22 U 0.20 U 0.13 U 0.22 U 0.20 U 0.13 U 0.22 U 0.20 U 0.13 U 0.22 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.12 0.12 0.12 0.12 0.12 0.12 0.20 U 0.12 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 0.12	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/2/98 9/14/00 9/2/98 9/14/04 9/25/02 6/14/01 11/27/12 10/26/04 2/16/07	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03 0.03 3.08 U 9.97 375.46	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Copper, dissolved Copper, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 18 18 18 18 126 18 125 18 18 18 18 18 18 18 125 17 17 18 18 18 125 17 17 18 18 125 17 17 18 125 17 18 125 17 18 125 17 18 18 125 17 18 18 125 17 18 18 18 125 18 18 18 18 125 18 18 125 18 18 125 18 18 18 18 125 18 18 18 18 18 125 18 18 18 18 18 18 18 18 125 18 18 18 18 18 18 18 18 18 18 18 18 18	High 7.96 0.0020 1.26 U 1.67 U 8.80 0.02 0.38 29.40 0.88 0.20 9.40 0.18 U 0.06 0.05 12.00 U 50.20	3/20/15 Date 9/25/02 9/29/97 9/25/02 11/27/12 3/17/09 11/27/12 12/12/08 9/29/97 9/25/02 9/25/02 9/25/02 9/25/02 9/29/97 9/29/98 9/29/97 9/29/06 8/7/97 11/27/12 9/25/02	Low 0.03 0.0002 0.13 U 0.22 U 0.20 U U 0.03 U 0.12 0.20 U 0.12 0.20 U U 0.20 U 0.12 0.20 U 0.13 U 0.22 U 0.22 U 0.20 U 0.13 U 0.22 U 0.20 U 0.13 U 0.22 U 0.20 U 0.13 U 0.22 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.13 U 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.20 U 0.12 0.20 U 0.12 U 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12 0.20 U 0.12	Date 11/16/07 11/27/12 9/29/06 11/27/12 4/19/01 11/27/12 11/23/10 9/29/97 9/24/03 3/14/08 9/21/10 8/30/08 9/29/06 9/14/00 9/2/98 9/14/04 9/25/02 6/14/01 11/27/12 10/26/04	Average 1.06 0.0009 0.31 U 0.83 U 2.31 0.02 0.09 2.66 0.36 0.16 1.39 0.04 U 0.03 0.03 3.08 U 9.97	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 25: BG-1 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC. 2019 Stand Contraction



lo. of mples 176 176 26 176 176 176 176 176 176 176 175 25 25 25 25 25 25 25 25 25 25 25 25 25	High 899.00 210.00 911.00 0.10 13.40 20.00 19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	Date 10/28/02 7/30/03 11/21/05 8/12/04 8/2/06 6/7/16 8/22/02 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/28/06 8/2/02 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	Low 524.00 16.00 612.00 0.10 -11.70 12.60 13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101 7.10	Date 9/14/04 11/21/08 4/17/02 8/12/04 4/29/10 8/2/06 8/2/06 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06 5/7/15	Average 684.31 92.46 773.11 0.10 -2.22 17.21 16.47 82.33 18.53 1,518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
176 176 176 176 176 176 176 176 176 175 175 25 26 174 18 176 194 190	210.00 911.00 0.10 13.40 20.00 19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	7/30/03 11/21/05 8/12/04 8/2/06 6/7/16 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 8/2/02 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	16.00 612.00 0.10 12.60 13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	11/21/08 4/17/02 8/12/04 4/29/10 8/2/06 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	92.46 773.11 0.10 -2.22 17.21 16.47 82.33 18.53 1.518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l meq/l meq/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg
176 176 26 176 176 176 176 175 175 25 26 24 26 176 175 25 26 176 175 176 175 26 175 174 18 176 194 190	210.00 911.00 0.10 13.40 20.00 19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	7/30/03 11/21/05 8/12/04 8/2/06 6/7/16 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/28/06 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	16.00 612.00 0.10 12.60 13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	11/21/08 4/17/02 8/12/04 4/29/10 8/2/06 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	92.46 773.11 0.10 -2.22 17.21 16.47 82.33 18.53 1.518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l meq/l meq/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg
176 26 176 176 26 177 175 175 25 25 26 176 175 176 175 25 26 24 26 175 176 122 26 175 174 18 176 194 190	911.00 0.10 13.40 20.00 19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	11/21/05 8/12/04 8/2/06 6/7/16 8/22/02 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	612.00 0.10 -11.70 12.60 13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	4/17/02 8/12/04 4/29/10 8/2/06 8/2/06 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	773.11 0.10 -2.22 17.21 16.47 82.33 1.518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l meg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l m
26 176 176 26 177 175 175 25 25 26 24 26 176 22 26 175 175 25 26 176 178 176 194 190	0.10 13.40 20.00 19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/12/04 8/2/06 6/7/16 8/22/02 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/28/06 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.10 -11.70 12.60 13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	8/12/04 4/29/10 8/2/06 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	0.10 -2.22 17.21 16.47 82.33 1.518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l % meg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l m
176 176 26 176 175 175 25 25 26 24 26 176 22 26 175 175 175 25 26 176 177 18 176 194 190	13.40 20.00 19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/2/06 6/7/16 8/22/02 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/30/08 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	-11.70 12.60 13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	4/29/10 8/2/06 4/29/10 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	-2.22 17.21 16.47 82.33 18.53 1,518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	% meq/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg
176 176 26 175 175 25 25 26 24 26 175 26 176 22 26 175 176 177 18 176 194 190	20.00 19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	6/7/16 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/30/08 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	12.60 13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	8/2/06 4/29/10 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	17.21 16.47 82.33 18.53 1,518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	meq/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg
176 26 176 175 176 175 25 25 26 24 26 175 176 22 26 175 174 18 176 194 190	19.60 400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/22/02 8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/30/08 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	13.60 10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	4/29/10 8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	16.47 82.33 18.53 1,518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	meq/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg
26 176 175 176 175 25 25 26 24 26 176 22 26 175 174 18 176 194 190	400.00 57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/22/02 8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/30/08 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	10.00 2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	82.33 18.53 1,518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
176 175 175 25 25 26 176 22 26 175 176 22 26 175 174 18 176 194 190	57.90 1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/30/06 9/6/16 12/16/03 9/30/08 9/28/06 9/28/06 9/28/06 9/30/08 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	2.00 1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	8/2/06 8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	18.53 1,518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l units mg/l mg/l none mg/l mg/l mg/l mg/l
175 176 175 25 25 26 176 22 26 175 176 22 26 175 174 18 176 194 190	1,770 26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	9/6/16 12/16/03 9/30/08 9/28/06 8/2/06 9/30/08 8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	1,160 2.09 5.00 0.03 0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	8/2/06 6/6/17 11/27/02 11/6/14 5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	1,518 22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	µmhos mg/l mg/l mg/l mg/l mg/l mg/l units mg/l mg/l none mg/l mg/l mg/l
176 175 25 25 26 24 26 176 22 26 175 174 18 176 194 190	26.90 47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	12/16/03 9/30/08 9/28/06 9/28/06 9/30/08 8/2/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	2.09 5.00 0.03 0.02 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	6/6/17 11/27/02 11/6/14 5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	22.17 14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l mg/l mg/l mg/l mg/l units mg/l mg/l mg/l mg/l mg/l mg/l
175 25 25 26 24 26 176 22 26 175 174 18 176 194 190	47.00 2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	9/30/08 9/28/06 9/28/06 8/2/06 9/30/08 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	5.00 0.03 0.02 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	11/27/02 11/6/14 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	14.73 1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l mg/l mg/l mg/l units mg/l mg/l mg/l mg/l mg/l mg/l
25 25 26 24 26 176 22 26 175 174 18 176 194 190	2.06 2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	9/28/06 9/28/06 8/2/06 9/30/08 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.03 0.02 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	11/6/14 5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	1.05 0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l mg/l mg/l units mg/l mg/l mg/l mg/l mg/l mg/l
25 26 24 26 176 22 26 175 174 18 176 194 195 190	2.08 0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	9/28/06 8/2/06 9/30/08 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.02 0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	5/18/06 5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	0.59 0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l mg/l units mg/l mg/l mg/l mg/l mg/l µmhos
25 26 24 26 176 22 26 175 174 18 176 194 190	0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/2/06 9/30/08 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l units mg/l mg/l none mg/l mg/l mg/l µmhos
25 26 24 26 176 22 26 175 174 18 176 194 190	0.21 1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/2/06 9/30/08 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.01 0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	5/18/06 12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	0.08 0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l units mg/l mg/l none mg/l mg/l mg/l µmhos
26 24 26 176 22 26 175 174 18 176 194 190	1.61 27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	9/30/08 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.59 0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	12/20/07 8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	0.89 5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l units mg/l mg/l mg/l mg/l µmhos
24 26 176 22 26 175 174 18 176 194 195 190	27.00 28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/22/02 8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.50 1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	8/2/06 4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	5.19 5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l units mg/l mg/l none mg/l mg/l µmhos
26 176 22 26 175 174 18 176 194 195 190	28.00 9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/22/02 5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	1.00 7.50 0.12 0.03 23.40 U 0.03 789 1,101	4/13/16 8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	5.52 8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l units mg/l mg/l mg/l mg/l µmhos
176 22 26 175 174 18 176 194 195 190	9.20 155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	5/21/09 5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	7.50 0.12 0.03 23.40 U 0.03 789 1,101	8/30/08 8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	8.78 48.10 0.06 42.91 12.46 0.28 913 1,520	units mg/l mg/l none mg/l mg/l µmhos
22 26 175 174 18 176 194 195 190	155.00 0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	5/18/06 8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.12 0.03 23.40 U 0.03 789 1,101	8/18/10 8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	48.10 0.06 42.91 12.46 0.28 913 1,520	mg/l mg/l none mg/l mg/l µmhos
26 175 174 18 176 194 195 190	0.15 73.30 50.00 0.80 1,050 2,874 10.01 22.70	8/16/11 12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	0.03 23.40 U 0.03 789 1,101	8/2/06 9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	0.06 42.91 12.46 0.28 913 1,520	mg/l none mg/l mg/l µmhos
175 174 18 176 194 195 190	73.30 50.00 0.80 1,050 2,874 10.01 22.70	12/16/02 9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	23.40 U 0.03 789 1,101	9/30/08 9/2/15 9/28/06 8/2/06 10/5/06	42.91 12.46 0.28 913 1,520	none mg/l mg/l µmhos
174 18 176 194 195 190	50.00 0.80 1,050 2,874 10.01 22.70	9/28/06 8/22/02 6/7/16 2/10/16 7/29/09	U 0.03 789 1,101	9/2/15 9/28/06 8/2/06 10/5/06	12.46 0.28 913 1,520	mg/l mg/l mg/l µmhos
18 176 194 195 190	0.80 1,050 2,874 10.01 22.70	8/22/02 6/7/16 2/10/16 7/29/09	0.03 789 1,101	9/28/06 8/2/06 10/5/06	0.28 913 1,520	mg/l mg/l µmhos
176 194 195 190	1,050 2,874 10.01 22.70	6/7/16 2/10/16 7/29/09	789 1,101	8/2/06 10/5/06	913 1,520	mg/l µmhos
194 195 190	2,874 10.01 22.70	2/10/16 7/29/09	1,101	10/5/06	1,520	µmhos
195 190	<u>10.01</u> 22.70	7/29/09				
190	22.70	7/29/09	7.10	5/7/15		
		0/0/40			8.55	units
186		8/2/16	5.80	1/26/10	12.12	(°C)
	547.26	11/10/10	468.30	7/1/02	506.49	Ft.
lo. of	High	Date	Low	Date	Average	Units
mples	-					
28	0.67	8/21/03	0.03	5/18/06	0.14	mg/l
28	0.0009	9/30/08	0.0004	7/11/13	0.0006	mg/l
28	0.14	7/29/09	U	7/6/17	0.02	mg/l
						mg/l
						mg/l
						mg/l
						mg/l
			•			mg/l
			•		_	mg/l
						mg/l
	•		•			mg/l
						mg/l
						mg/l
	0.19	9/30/08			0.03	mg/l
28	U	9/28/06	U	9/28/06	U	mg/l
28	0.12	8/22/02	U	8/18/10	0.04	mg/l
	0.03		U		0.02	mg/l
			-			mg/l
						mg/l
20						mg/l
177			302.00	9/11/13	365.60	mg/l
177	<u>71 4/1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 </u>	8//////				
178				1/27/01	0 45	
	434.00 0.82	2/7/17 4/13/16	0.06 U	4/27/04 4/13/16	0.45 U	mg/l mg/l
	28 177 28 178 28 177	28 U 177 0.97 28 U 178 11.70 28 0.02 28 U 28 0.63 28 U 28 0.16 177 4.40 26 0.19 28 U 28 0.12 28 0.03 178 6.20 28 U 28 U 28 0.33	28 U 4/13/16 177 0.97 7/12/07 28 U 4/13/16 178 11.70 9/30/08 28 0.02 9/28/06 28 U 4/13/16 28 0.02 9/28/06 28 U 4/13/16 28 0.63 9/28/06 28 U 4/13/16 28 0.16 8/12/04 177 4.40 9/30/08 26 0.19 9/30/08 28 U 9/28/06 28 0.12 8/22/02 28 0.12 8/22/02 28 0.03 9/30/08 178 6.20 7/24/02 28 U 4/13/16 177 29.30 4/17/02	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Table 26: BG-4 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC. 20 A CONTRACTOR OF THE STATE



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry		підп	Dale	LOW	Dale	Average	Units
	Samples 101	1,150.00	12/12/17	447.00	3/22/11	698.59	mg/l
Bicarbonate as CaCO3 Carbonate as CaCO3	101	272.00	3/22/11	43.10	2/10/16	122.75	mg/l
Total Alkalinity as	101	1,300.00	12/12/17	670.00	5/14/14	821.36	mg/l
Bromide	11	0.94	7/10/13	U	11/10/14	0.47	mg/l
Cation-Anion Balance	101	7.90	10/28/10	-11.10	10/9/13	-2.88	<u>%</u>
Sum of Anions	101	58.60	6/23/10	15.00	5/14/14	21.29	 meq/l
Sum of Cations	101	51.30	6/23/10	14.90	5/6/13	20.13	
Chemical Oxygen	101	320.00	9/22/10	16.00	10/12/15	75.33	meq/l mg/l
Chloride	101	1,400.00	6/23/10	14.20	11/30/15	128.94	mg/l
Conductivity, Lab	101	5,740	6/23/10	1,420	1/11/16	1,992	µmhos
Fluoride	101	25.80	7/8/14	9.80	2/23/10	21.44	
Hardness as CaCO3	101	44.00	10/28/10	9.80	5/6/13	16.27	mg/l
Nitrate as N, dissolved	101	0.07	11/10/14	0.02	10/7/09	0.04	mg/l mg/l
Nitrate/Nitrite as N,	12	0.07	11/10/14	0.02	10/7/09	0.04	
Nitrite as N, dissolved	12	<u> </u>	11/10/14	U.02	11/10/14	U.04	mg/l mg/l
	12	1.17	9/22/10	0.56		-	
Nitrogen, Ammonia	12		9/22/10		10/7/09	0.84	mg/l
Nitrogen, Organic	12	<u>3.90</u> 5.10	9/22/10	0.20	12/13/12 10/12/15	1.17	mg/l
<u>Nitrogen, Total Kjeldahl</u> pH, lab	101		3/22/10	0.80		1.91	mg/l
	101	9.60	10/7/09	8.50	2/10/16 10/12/15	8.94	units
Phosphate, total	12	155.00		0.06	10/12/15	23.36	mg/l
Phosphorus, total SAR in Water	101	0.07	8/18/10	0.02		0.04 49.77	mg/l
		115.00	6/23/10	39.20	<u>11/10/10</u> 11/22/11		none
Sulfate	101 12	110.00	11/10/10	UU	11/10/14	30.66	mg/l
Sulfide		1.33	8/11/11	_		0.56	mg/l
Total Dissolved Solids	101	3,250	6/23/10	829	5/14/14	1,141	mg/l
Conductivity, Field	128 127	5,492	6/23/10	1,232	6/5/17	2,089	<u>µmhos</u>
pH, Field		9.66	2/4/11	7.20	3/9/16 2/5/14	8.67	units (°C)
Temperature (°C), Field	128 121	<u>21.00</u> 540.40	8/18/10 9/7/14	7.10 520.81	5/18/10	12.55 529.64	
Water Level, Field	121	540.40	9/7/14	520.01	5/16/10	529.04	Ft.
Parameters	No. of	High	Date	Low	Date	Average	Units
				LOW	Dale	Average	Units
		mgn				-	
Metals	Samples	-		0.04	8/11/11	0.06	ma/l
Metals Aluminum, dissolved	Samples 11	0.10	8/18/10	0.04	8/11/11	0.06	mg/l
Metals Aluminum, dissolved Arsenic, dissolved	Samples 11 11	0.10	8/18/10 11/10/10	0.0003	11/10/14	0.0027	mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	Samples 11 11 11	0.10 0.01 0.46	8/18/10 11/10/10 7/5/17	0.0003 0.04	11/10/14 10/7/09	0.0027 0.31	mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	Samples 11 11 11 11 11	0.10 0.01 0.46 U	8/18/10 11/10/10 7/5/17 4/12/16	0.0003 0.04 U	11/10/14 10/7/09 4/12/16	0.0027 0.31 U	mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	Samples 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14	0.0003 0.04 U 0.45	11/10/14 10/7/09 4/12/16 11/19/09	0.0027 0.31 U 0.73	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	Samples 11 11 11 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16	0.0003 0.04 U 0.45 U	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16	0.0027 0.31 U 0.73 U	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	Samples 11 11 11 11 11 11 11 101 11 101	0.10 0.01 0.46 U 1.11 U 7.70	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10	0.0003 0.04 U 0.45 U 1.80	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11	0.0027 0.31 U 0.73 U 2.79	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 11	0.10 0.01 0.46 U 1.11 U 7.70 U	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16	0.0003 0.04 U 0.45 U 1.80 U	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16	0.0027 0.31 U 0.73 U 2.79 U	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	Samples 11 11 11 11 101 11 101 11 101 11 101 11 101 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17	0.0003 0.04 U 0.45 U 1.80 U 0.02	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09	0.0027 0.31 U 0.73 U 2.79 U 0.05	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	Samples 11 11 11 11 101 11 101 11 101 11 101 11 101 11 101 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09	0.0003 0.04 U 0.45 U 1.80 U 0.02 0.03	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	Samples 11 11 11 11 101 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16	0.0003 0.04 U 0.45 U 1.80 U 0.02 0.03 U	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	Samples 11 11 11 11 101 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10	0.0003 0.04 U 0.45 U 1.80 U 0.02 0.03 U 0.17	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10	0.0003 0.04 U 0.45 U 1.80 U 0.02 0.03 U 0.17 1.30	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnesied	Samples 11 11 11 11 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09	0.0003 0.04 U 0.45 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved Marcury, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 101 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16	0.0003 0.04 U 0.45 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnese, dissolved Mercury, dissolved Molybdenum, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 11/2/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10	0.0003 0.04 U 0.45 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31 U	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10 7/10/13	0.0003 0.04 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01 0.02	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09 7/10/13	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 11 101 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31 U 34.80	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10 7/10/13 8/2/10	0.0003 0.04 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01 0.02 0.02 0.60	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09 7/10/13 11/1/16	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30 U 1.91	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	Samples 11 11 11 11 101 101 11 101 11 101 11 101 11	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31 U 34.80 0.01	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10 7/10/13 8/2/10 11/10/10	0.0003 0.04 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01 0.02 0.60 0.001	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09 7/10/13 11/1/16 8/11/11	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30 U 1.91 0.005	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Magnese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 101	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31 U 34.80 0.01 15.80	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10 7/10/13 8/2/10 11/10/10 12/4/12	0.0003 0.04 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01 0.02 0.60 0.001 0.50	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09 7/10/13 11/1/16 8/11/11 2/17/11	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30 U 1.91 0.005 12.08	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 101 11 101 101	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31 U 34.80 0.01 15.80 1150	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10 7/10/13 8/2/10 11/10/10 12/4/12 6/23/10	0.0003 0.04 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01 0.02 0.60 0.001 0.50 332.00	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09 7/10/13 11/1/16 8/11/11 2/17/11 5/6/13	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30 U 1.91 0.005 12.08 448.34	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Strontium, dissolved	Samples 11 11 11 11 101 11 101 11 101 11 101 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 101 101 101 101	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31 U 34.80 0.01 15.80 1150 1.44	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10 7/10/13 8/2/10 11/10/10 12/4/12 6/23/10 12/12/17	0.0003 0.04 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01 0.02 0.60 0.001 0.50 332.00 0.48	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09 7/10/13 11/1/16 8/11/11 2/17/11 5/6/13 8/2/10	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30 U 1.91 0.005 12.08 448.34 0.71	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	Samples 11 11 11 11 11 101 11 101 11 101 101 101	0.10 0.01 0.46 U 1.11 U 7.70 U 0.07 0.90 U 0.21 5.90 0.03 U 1.31 U 34.80 0.01 15.80 1150	8/18/10 11/10/10 7/5/17 4/12/16 7/8/14 4/12/16 10/28/10 4/12/16 7/5/17 10/7/09 4/12/16 11/10/10 10/28/10 10/7/09 4/12/16 11/10/10 7/10/13 8/2/10 11/10/10 12/4/12 6/23/10	0.0003 0.04 U 1.80 U 0.02 0.03 U 0.17 1.30 0.01 U 0.01 0.02 0.60 0.001 0.50 332.00	11/10/14 10/7/09 4/12/16 11/19/09 4/12/16 9/15/11 4/12/16 10/7/09 12/4/12 4/12/16 10/7/09 3/9/14 7/10/13 4/12/16 10/7/09 7/10/13 11/1/16 8/11/11 2/17/11 5/6/13	0.0027 0.31 U 0.73 U 2.79 U 0.05 0.16 U 0.18 2.24 0.01 U 0.30 U 1.91 0.005 12.08 448.34	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 27: BG-5 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC. 2013 Stan And Charles Della De



D		11	Dete		Data	A	11
Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	000.00	40/40/40	544.00	40/0/40	000.00	
Bicarbonate as CaCO3	87	869.00	12/18/13	541.00	12/8/10	666.20	mg/l
Carbonate as CaCO3	87	219.00	12/8/10	64.50	11/2/16	95.58	mg/l
Total Alkalinity as	87	1,040.00	12/18/13	633.00	6/11/14	761.83	mg/l
Bromide	1	<u> </u>	4/12/16	U	4/12/16	U	mg/l
Cation-Anion Balance	87	5.90	4/9/14	-9.30	4/11/11	-2.58	%
Sum of Anions	87	23.00	12/18/13	14.30	6/11/14	16.89	meq/l
Sum of Cations	87	20.00	12/18/13	13.10	4/11/11	16.03	meq/l
Chemical Oxygen	9	800.00	1/13/11	112.00	10/12/15	279.67	mg/l
Chloride	69	70.00	12/8/10	10.00	1/20/11	17.05	mg/l
Conductivity, Lab	87	2,000	12/18/13	1,320	7/5/17	1,533	µmhos
Fluoride	87	25.50	7/8/14	14.60	9/17/12	23.06	mg/l
Hardness as CaCO3	87	16.00	9/5/17	10.00	9/11/13	12.67	mg/l
Nitrate as N, dissolved	1	0.03	12/27/12	0.03	12/27/12	0.03	mg/l
Nitrate/Nitrite as N,	1	0.03	12/27/12	0.03	12/27/12	0.03	mg/l
Nitrite as N, dissolved	1	<u> </u>	4/12/16	U	4/12/16	U	mg/l
Nitrogen, Ammonia	9	0.95	10/12/15	0.71	1/20/11	0.82	mg/l
Nitrogen, Organic	9	8.30	1/13/11	0.80	10/12/15	2.82	mg/l
Nitrogen, Total Kjeldahl	9	9.00	1/13/11	1.70	10/12/15	3.63	mg/l
pH, lab	87	9.40	12/8/10	8.70	2/10/16	8.88	units
Phosphate, total	9	77.50	8/11/11	0.09	1/13/11	8.72	mg/l
Phosphorus, total	9	0.09	7/10/13	0.03	1/13/11	0.04	mg/l
SAR in Water	87	56.60	12/18/13	37.80	4/11/11	44.24	none
Sulfate	5	20.00	1/13/11	3.45	11/2/16	12.06	mg/l
Sulfide	4	0.10	1/20/11	0.03	7/10/13	0.06	mg/l
Total Dissolved Solids	87	1,130	12/18/13	799	5/14/14	882	mg/l
Conductivity, Field	86	2,413	9/17/12	1,232	6/5/17	1,515	µmhos
pH, Field	86	9.58	3/5/12	7.10	3/9/16	8.43	units
Temperature (°C), Field	86	23.00	9/5/17	4.62	11/22/11	11.46	(°C)
Water Level, Field	05	E17 10			40/40/45		E+
	85	517.10	8/7/17	493.95	10/12/15	508.35	Ft.
				-		•	
Parameters	No. of	High	Date	493.95	Date	Average	Units
Parameters Metals	No. of Samples	High	Date	Low	Date	Average	Units
Parameters Metals Aluminum, dissolved	No. of Samples 2	High 0.04	Date 1/13/11	Low	Date 1/13/11	Average	Units mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved	No. of Samples 2 10	High 0.04 0.06	Date 1/13/11 1/13/11	Low 0.04 0.00	Date 1/13/11 4/12/16	Average 0.04 0.01	Units mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 2 10 10	High 0.04 0.06 0.39	Date 1/13/11 1/13/11 1/13/11	Low 0.04 0.00 0.31	Date 1/13/11 4/12/16 7/5/17	Average 0.04 0.01 0.34	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 2 10 10 10	High 0.04 0.06 0.39 0.00	Date 1/13/11 1/13/11 1/13/11 11/10/14	Low 0.04 0.00 0.31 0.00	Date 1/13/11 4/12/16 7/5/17 11/10/14	Average 0.04 0.01 0.34 U	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	No. of Samples 2 10 10 10 87	High 0.04 0.06 0.39 0.00 0.91	Date 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13	Low 0.04 0.00 0.31 0.00 0.62	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10	Average 0.04 0.01 0.34 U 0.72	Units mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	No. of Samples 2 10 10 1 87 10	High 0.04 0.06 0.39 0.00 0.91 U	Date 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16	Low 0.04 0.00 0.31 0.00 0.62 U	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16	Average 0.04 0.01 0.34 U 0.72 U	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	No. of Samples 2 10 10 1 87 10 87 10 87	High 0.04 0.06 0.39 0.00 0.91 U 3.40	Date 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16 9/5/17	Low 0.04 0.00 0.31 0.00 0.62 U 2.00	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13	Average 0.04 0.01 0.34 U 0.72 U 2.40	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	No. of Samples 2 10 10 1 87 10 87 10 87 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U	Date 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16 9/5/17 4/12/16	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16	Average 0.04 0.01 0.34 U 0.72 U 2.40 U	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	No. of Samples 2 10 10 1 87 10 87 10 87 10 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U	Date 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U U U	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 4/12/16	Average 0.04 0.01 0.34 U 0.72 U 2.40 U U U U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	No. of Samples 2 10 10 1 87 10 87 10 87 10 87 10 87 10 87	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11	Date 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16 7/10/13	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U U 0.02	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 4/12/16 12/4/12	Average 0.04 0.01 0.34 U 0.72 U 2.40 U U U 0.05	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	No. of Samples 2 10 10 1 87 10 87 10 87 10 10 87 10 10 87 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05	Date 1/13/11 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16 7/10/13 12/4/12	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U U 0.02 0.05	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 4/12/16 12/4/12 12/4/12	Average 0.04 0.01 0.34 U 0.72 U 2.40 U U U 0.05 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	No. of Samples 2 10 10 1 87 10 87 10 87 10 10 87 10 10 87 10 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16 7/10/13 12/4/12 1/13/11	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U U 0.02 0.05 0.11	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 4/12/16 12/4/12 12/4/12 7/5/17	Average 0.04 0.01 0.34 U 0.72 U 2.40 U U 0.05 U 0.12	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 2 10 10 1 87 10 87 10 10 87 10 10 8 1 10 8 7 10 8 7 8 7	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/13/11 11/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U U 0.02 0.05 0.11 1.30	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 7/5/17 12/8/10	Average 0.04 0.01 0.34 U 0.72 U 2.40 U U 0.05 U 0.12 1.61	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 2 10 10 1 87 10 87 10 10 87 10 10 87 10 87 10 87 11	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of 2 10 10 1 87 10 87 10 87 10 87 10 87 10 87 10 87 10 87 10 10 10 10 10 10 10 10 10 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01 U	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 4/12/16 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 2 10 10 1 87 10 87 10 87 10 8 1 10 8 1 10 87 10 10 10 10 10 10 10 10 10 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01 U 0.06	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U U 0.02 0.05 0.11 1.30 0.01 U 0.06	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	No. of 2 10 10 10 1 87 10 87 10 87 10 87 10 87 10 87 10 87 10 10 10 10 10 10 10 10 10 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01 U 0.06 U	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11 4/12/16	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U 0.06 U	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11 4/12/16	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Marcury, dissolved Molybdenum, dissolved Nickel, dissolved	No. of 2 10 10 10 1 87 10 87 10 87 10 87 10 87 10 87 10 10 87 87 87 87 87 87 87 87 87 87	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01 U 0.01 U 0.06 U 2.10	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/2/8/10	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U 0.06 U 0.60	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 11/2/16 11/2/16	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06 U 1.04	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Marcury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	No. of 2 10 10 1 87 10 87 10 87 10 87 10 87 1 10 87 1 10 87 1 10 87 1 10 87 10 10 87 10 10 87 10 10 10 10 10 10 10 10 10 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01 U 0.01 U 0.06 U 2.10 U	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/2/8/10 4/12/16	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U 0.06 U 0.60 U	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 4/12/16 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11 4/12/16 11/13/11 4/12/16 11/2/16 4/12/16	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06 U 1.04 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	No. of 2 10 10 1 87 10 87 10 87 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 10	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01 U 0.01 U 0.06 U 2.10 U 16.90	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/2/8/10 4/12/16 12/8/10 4/12/16 12/8/10	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U 0.06 U 0.60 U 1.10	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 4/12/16 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11 4/12/16 11/2/16 11/2/16 11/2/16 12/8/10	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06 U 1.04 U 15.24	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	No. of <u>Samples</u> 2 10 10 1 87 10 87 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 87 10 87 87 10 87 87 10 87 87 10 87 87 87 87 87 87 87 87 87 87	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U 0.11 0.05 0.13 1.90 0.01 U 0.01 U 0.06 U 2.10 U 16.90 439.00	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 12/8/10 4/12/16 12/8/10 4/12/16 12/8/10 4/12/16 12/8/10	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U 0.06 U 0.06 U 0.60 U 1.10 292.00	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11 4/12/16 11/2/16 11/2/16 11/2/16 12/8/10 4/12/16 12/8/10 4/11/11	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06 U 1.04 U 15.24 356.26	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Selenium, dissolved Silica, dissolved Strontium, dissolved	No. of 2 10 10 1 87 10 87 10 87 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 87 10 87 87 10 87 87 87 87 87 87 87 87 87 87	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U U 0.11 0.05 0.13 1.90 0.01 U 0.01 U 0.06 U 2.10 U 16.90 439.00 0.83	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 12/8/10 4/12/16 9/15/11 12/18/13 9/7/14	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U 0.06 U 0.60 U 0.60 U 1.10 292.00 0.38	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11 4/12/16 11/2/16 11/2/16 11/2/16 12/8/10 4/11/11 12/8/10	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06 U 1.04 U 15.24	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	No. of <u>Samples</u> 2 10 10 1 87 10 87 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 1 10 87 87 10 87 87 10 87 87 10 87 87 10 87 87 87 87 87 87 87 87 87 87	High 0.04 0.06 0.39 0.00 0.91 U 3.40 U 0.11 0.05 0.13 1.90 0.01 U 0.01 U 0.06 U 2.10 U 16.90 439.00	Date 1/13/11 1/13/11 1/13/11 1/13/11 1/10/14 12/18/13 4/12/16 9/5/17 4/12/16 7/10/13 12/4/12 1/13/11 3/9/11 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 1/13/11 4/12/16 12/8/10 4/12/16 12/8/10 4/12/16 12/8/10 4/12/16 12/8/10	Low 0.04 0.00 0.31 0.00 0.62 U 2.00 U 0.02 0.05 0.11 1.30 0.01 U 0.06 U 0.06 U 0.60 U 1.10 292.00	Date 1/13/11 4/12/16 7/5/17 11/10/14 12/8/10 4/12/16 9/11/13 4/12/16 12/4/12 12/4/12 7/5/17 12/8/10 1/13/11 4/12/16 1/13/11 4/12/16 11/2/16 11/2/16 11/2/16 12/8/10 4/12/16 12/8/10 4/11/11	Average 0.04 0.01 0.34 U 0.72 U 2.40 U 0.05 U 0.12 1.61 0.01 U 0.06 U 1.04 U 15.24 356.26	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 28: BG-6 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC. 20 A Martin NY 77 910159



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	0				5	
Bicarbonate as CaCO3	4	711	10/18/14	501	12/15/15	592	mg/l
Carbonate as CaCO3	4	307	12/15/15	125	10/18/14	254	mg/l
Total Alkalinity as	4	911	9/28/17	808	12/15/15	846	mg/l
Bromide	4	0.14	10/18/14	0.13	9/28/17	0.13	mg/l
Cation-Anion Balance	4	0.00	10/18/14	-2.10	4/5/16	-1.05	%
Sum of Anions	4	24.00	10/18/14	23.00	12/15/15	23.75	meq/l
Sum of Cations	4	24.00	10/18/14	23.00	12/15/15	23.25	meq/l
Chemical Oxygen	4	29.00	12/15/15	14.00	4/5/16	22.25	mg/l
Chloride	4	29.00	12/15/15	171	9/28/17	193	mg/l
Conductivity, Lab	4	2,340	10/18/14	2,240	12/15/15	2,278	µmhos
	4	2,340	9/28/17	18.20	12/15/15	19.35	
Fluoride	4		9/20/17				mg/l
Hardness as CaCO3		13.00	10/18/14	11.00	4/5/16	11.98	mg/l
Nitrate as N, dissolved	4	0.02	10/18/14	0.02	10/18/14	0.02	mg/l
Nitrate/Nitrite as N,	4	0.02	10/18/14	0.02	10/18/14	0.02	mg/l
Nitrite as N, dissolved	4	0.01	12/15/15	0.00	10/18/14	0.01	mg/l
Nitrogen, Ammonia	4	1.22	10/18/14	1.11	9/28/17	1.17	mg/l
Nitrogen, Organic	4	0.90	9/28/17	0.20	10/18/14	0.45	mg/l
Nitrogen, Total Kjeldahl	4	2.00	9/28/17	1.40	10/18/14	1.60	mg/l
pH, lab	4	9.60	12/15/15	8.90	10/18/14	9.40	units
Phosphate, total	4	0.40	12/15/15	0.12	4/5/16	0.24	mg/l
Phosphorus, total	4	0.13	12/15/15	0.04	4/5/16	0.08	mg/l
SAR in Water	4	66	4/5/16	64.00	12/15/15	65	none
Sulfate	4	40	10/18/14	7.91	9/28/17	19	mg/l
Sulfide	4	0.12	12/15/15	0.12	12/15/15	0.12	mg/l
Total Dissolved Solids	4	1,350	10/18/14	1,240	12/15/15	1,280	mg/l
Conductivity, Field	4	2,575	12/15/15	2,165	4/5/16	2,321	µmhos
pH, Field	4	9.24	12/15/15	8.61	4/5/16	9.00	units
Temperature (°C), Field	4	22.50	10/18/14	12.60	12/15/15	15.97	(°C)
Water Level, Field	4	480.10	9/28/17	474.40	1/16/15	477.15	Ft.
Damaged and		1121	Dete	• • • • •	Data		11
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples		10/10/11		4/5/40	0.00	
Aluminum, dissolved	4	0.08	10/18/14	U	4/5/16	0.06	mg/l
Arsenic, dissolved	4	0.03	10/18/14	U	9/28/17	0.01	mg/l
Barium, dissolved	4	0.06	10/18/14	0.02	12/15/15	0.04	mg/l
Beryllium, dissolved							
	4	U	4/5/16	U	4/5/16	U	mg/l
Boron, dissolved	4	U 0.67	4/5/16 10/18/14	U 0.56	12/15/15	0.62	mg/l
Boron, dissolved Cadmium, dissolved		U 0.67 U	4/5/16 10/18/14 4/5/16	U	12/15/15 4/5/16	0.62 U	mg/l mg/l
Boron, dissolved	4 4 4	U 0.67	4/5/16 10/18/14 4/5/16 10/18/14	U 0.56 U U	12/15/15 4/5/16 4/5/16	0.62	mg/l
Boron, dissolved Cadmium, dissolved	4 4	U 0.67 U	4/5/16 10/18/14 4/5/16	U 0.56 U	12/15/15 4/5/16	0.62 U	mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved	4 4 4	U 0.67 U 3.60	4/5/16 10/18/14 4/5/16 10/18/14	U 0.56 U U	12/15/15 4/5/16 4/5/16	0.62 U 2.15	mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	4 4 4 4	U 0.67 U 3.60 U	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16	U 0.56 U U U	12/15/15 4/5/16 4/5/16 4/5/16	0.62 U 2.15 U	mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	4 4 4 4 4 4	U 0.67 U 3.60 U U	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 4/5/16	U 0.56 U U U U	12/15/15 4/5/16 4/5/16 4/5/16 4/5/16	0.62 U 2.15 U U	mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 4/5/16 9/28/17	U 0.56 U U U U 0.06	12/15/15 4/5/16 4/5/16 4/5/16 4/5/16 12/15/15	0.62 U 2.15 U U 0.17	mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.36 U 0.17	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 4/5/16 9/28/17 4/5/16 4/5/16	U 0.56 U U U U 0.06 U	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14	0.62 U 2.15 U U 0.17 U	mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 4/5/16 9/28/17 4/5/16 4/5/16 9/28/17	U 0.56 U U U 0.06 U 0.13 U	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14	0.62 U 2.15 U U 0.17 U 0.16	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	4 4 4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.17 1.90	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 9/28/17 4/5/16 4/5/16 9/28/17 9/28/17	U 0.56 U U U 0.06 U 0.13	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14 10/18/14	0.62 U 2.15 U U 0.17 U 0.16 1.63	<u>ma/l</u> mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	4 4 4 4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.17 1.90 U U	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17 9/28/17 9/28/17 4/5/16	U 0.56 U U U 0.06 U 0.13 U U U U	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14 10/18/14 4/5/16	0.62 U 2.15 U U 0.17 U 0.16 1.63 U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.36 U 0.17 1.90 U U U 0.14	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17 9/28/17 9/28/17 4/5/16 10/18/14	U 0.56 U U U 0.06 U 0.13 U U U U 0.07	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14 10/18/14 4/5/16 9/28/17	0.62 U 2.15 U U 0.17 U 0.16 1.63 U U U 0.10	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.17 1.90 U U U 0.14 U	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17 9/28/17 9/28/17 9/28/17 4/5/16 10/18/14 4/5/16	U 0.56 U U U 0.06 U 0.13 U U U U U 0.07 U	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14 10/18/14 4/5/16 9/28/17 4/5/16	0.62 U 2.15 U U 0.17 U 0.16 1.63 U U U 0.10 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.17 1.90 U U U 0.14 U 14.50	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17 9/28/17 9/28/17 9/28/17 9/28/17 4/5/16 10/18/14 4/5/16 10/18/14	U 0.56 U U U 0.06 U 0.13 U U U 0.07 U 9.30	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17	0.62 U 2.15 U U 0.17 U 0.16 1.63 U U U 0.10 U U 12.48	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Marcury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.17 1.90 U U U 0.14 U 0.14 U 14.50 U	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 4/5/16 9/28/17 4/5/16 9/28/17 9/28/17 9/28/17 9/28/17 9/28/17 4/5/16 10/18/14 4/5/16 10/18/14	U 0.56 U U U 0.06 U 0.13 U 0.13 U U 0.07 U 9.30 U	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17 12/15/15	0.62 U 2.15 U U 0.17 U 0.16 1.63 U U 0.10 U 0.10 U 12.48 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	U 0.67 U 3.60 U U 0.36 U 0.17 1.90 U U U 0.14 U 14.50	4/5/16 10/18/14 4/5/16 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17 9/28/17 9/28/17 9/28/17 9/28/17 4/5/16 10/18/14 4/5/16 10/18/14	U 0.56 U U U 0.06 U 0.13 U U U 0.07 U 9.30	12/15/15 4/5/16 4/5/16 4/5/16 12/15/15 4/5/16 10/18/14 10/18/14 10/18/14 4/5/16 9/28/17 4/5/16 9/28/17	0.62 U 2.15 U U 0.17 U 0.16 1.63 U U U 0.10 U U 12.48	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 29: BG-7 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC.

Strontium, dissolved

Vanadium, dissolved

Zinc, dissolved

4

4

4

mg/l

mg/l

mg/l

0.22

U

0.04

12/15/15

10/18/14

12/15/15

10/18/14

10/18/14

12/15/15

U

U

U

0.33

U

0.04



		ormerly DS-4					
Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples						
Bicarbonate as CaCO3	11	11,100	12/5/16	1,500	10/12/16	7,084	mg/l
Carbonate as CaCO3	11	4,730	5/1/17	382	8/3/16	2,842	mg/l
Total Alkalinity as	11	15,800	5/1/17	1,950	10/12/16	9,915	mg/l
Bromide	1	U	7/11/16	U	7/11/16	U	mg/l
Cation-Anion Balance	11	0.80	9/6/16	-8.20	3/1/17	-3.53	%
Sum of Anions	11	459.00	5/1/17	62.00	10/12/16	283.27	meq/l
Sum of Cations	11	413.00	5/1/17	56.00	8/3/16	262.36	meq/l
Chemical Oxygen	1	137.00	7/11/16	137.00	7/11/16	137.00	mg/l
Chloride	11	4,950	5/1/17	748	7/11/16	2,935	mg/l
Conductivity, Lab	11	30,100	1/2/17	5,780	7/11/16	20,215	umhos
Fluoride	11	66.00	5/1/17	23.00	7/11/16	45.90	ma/l
Hardness as CaCO3	11	21.00	7/11/16	5.00	2/1/17	12.95	mg/l
Nitrate as N, dissolved	1	0.87	7/11/16	0.87	7/11/16	0.87	mg/l
Nitrate/Nitrite as N,	1	0.87	7/11/16	0.87	7/11/16	0.87	mg/l
Nitrite as N, dissolved	1	<u> </u>	7/11/16	U	7/11/16	U	mg/l
Nitrogen, Ammonia	1	1.99	7/11/16	1.99	7/11/16	1.99	mg/l
Nitrogen, Organic	1	0.90	7/11/16	0.90	7/11/16	0.90	mg/l
	1	2.90	7/11/16	2.90	7/11/16	2.90	
Nitrogen, Total Kjeldahl	11		9/6/16		12/5/16		mg/l
pH, lab		9.20		8.90		9.08	units
Phosphate, total	1	1.21	7/11/16	1.21	7/11/16	1.21	mg/l
Phosphorus, total	1	0.39	7/11/16	0.39	7/11/16	0.39	mg/l
SAR in Water	8	1,600	2/1/17	130.00	7/11/16	658	none
Sulfate	11	20.00	11/3/16	20.00	11/3/16	20.00	mg/l
Sulfide	1	U	7/11/16	U	7/11/16	U	mg/l
	11	24,000	5/1/17	3,320	8/3/16	14,975	mg/l
Total Dissolved Solids	11						
Conductivity, Field	11	31,690	5/1/17	5,748	7/11/16	20,033	umhos
Conductivity, Field pH, Field	11 11	<u>31,690</u> 9.00	5/1/17 7/11/16	5,748 8.80	7/11/16 1/2/17	20,033 8.92	units
Conductivity, Field pH, Field Temperature (°C), Field	11 11 11	31,690 9.00 23.20	5/1/17 7/11/16 7/11/16	5,748 8.80 8.80	7/11/16 1/2/17 1/2/17	20,033 8.92 12.89	units (°C)
Conductivity, Field pH, Field	11 11	<u>31,690</u> 9.00	5/1/17 7/11/16	5,748 8.80	7/11/16 1/2/17	20,033 8.92	units
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field	11 11 11 9	31,690 9.00 23.20 552.30	5/1/17 7/11/16 7/11/16 2/1/17	5,748 8.80 8.80 517.10	7/11/16 1/2/17 1/2/17 8/3/16	20,033 8.92 12.89 545.97	units (°C) Ft.
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters	11 11 11 9 No. of	31,690 9.00 23.20	5/1/17 7/11/16 7/11/16	5,748 8.80 8.80	7/11/16 1/2/17 1/2/17	20,033 8.92 12.89	units (°C)
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals	11 11 11 9	31,690 9.00 23.20 552.30 High	5/1/17 7/11/16 7/11/16 2/1/17 Date	5,748 8.80 517.10	7/11/16 1/2/17 1/2/17 8/3/16 Date	20,033 8.92 12.89 545.97 Average	units (°C) Ft. Units
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved	11 11 11 9 No. of	31,690 9.00 23.20 552.30 High 0.06	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16	5.748 8.80 517.10 Low 0.06	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16	20,033 8.92 12.89 545.97 Average 0.06	units (°C) Ft. Units mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved	11 11 9 No. of Samples 1 1	31,690 9.00 23.20 552.30 High 0.06 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16	5,748 8.80 517.10 Low 0.06 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U	units (°C) Ft. Units mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	11 11 11 9 No. of	31,690 9.00 23.20 552.30 High 0.06 U 0.25	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16	5.748 8.80 517.10 Low 0.06	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06	units (°C) Ft. Units mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	11 11 9 No. of <u>Samples</u> 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16	5.748 8.80 517.10 Low 0.06 U 0.25 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U	units (°C) Ft. Units mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	11 11 9 No. of <u>Samples</u> 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 5/1/17	5.748 8.80 517.10 Low 0.06 U 0.25	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 8/3/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25	units (°C) Ft. Units mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	11 11 9 No. of <u>Samples</u> 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 5/1/17 7/11/16	5.748 8.80 517.10 Low 0.06 U 0.25 U 1.71 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 8/3/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U	units (°C) Ft. Units mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 5/1/17 7/11/16	5.748 8.80 517.10 Low 0.06 U 0.25 U 1.71 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 8/3/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48	units (°C) Ft. Units mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	11 11 9 No. of <u>Samples</u> 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 5/1/17	5.748 8.80 517.10 Low 0.06 U 0.25 U 1.71	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 8/3/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U	units (°C) Ft. Units mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 5/1/17 7/11/16 1/2/17	5.748 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 8/3/16 7/11/16 10/12/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 5/1/17 7/11/16 1/2/17 7/11/16	5,748 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 8/3/16 7/11/16 10/12/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U 0.16	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 5/1/17 7/11/16 1/2/17 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.16	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 8/3/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U 8.00 U 0.16 0.04 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 1/2/17 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.30 U 0.16 0.04 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Lithium, dissolved Lead, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00 U 8.00 U 0.16 0.04 U 0.24	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 1/2/17 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Baryllium, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00 U 8.00 U 0.16 0.04 U 0.24 2.90	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 10/12/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Baryllium, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00 U 8.00 U 0.16 0.04 U 0.24	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Baryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Lithium, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.04 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.04	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.04 U 0.04	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.04	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.04 U 0.04 U 0.04 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.04 U 0.04 U 0.04 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.04 U	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved	11 11 9 No. of Samples 1 1 1 1 1 1 1 1 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.04 U 23.00	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.04 U 13.34	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Barium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	11 11 9 No. of Samples 1 1 1 1 1	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.24 1.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.04 U 13.34 U	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	11 11 9 No. of Samples 1 <	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.05 U 0.06 U 0.06 U 0.05 U 0.05 U 0.06 U 0.06 U 0.06 U 0.06 U 0.05 U 0.06 U 0.06 U 0.04 U 0.06 U 0.06 U 0.06 U 0.05 U 0.04 U 0.06 U 0.05 U 0.05 U 0.05 U 0.04 U 0.04 U 0.04 U 0.05 U 0 U 0.05 U 0.05 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16 7/11/16	5,748 8.80 8.80 517.10 0.06 U 0.25 U 1.71 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.24 1.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.05 U 0.05 U 0.17 0 0.06 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.17 0 0.25 U 0.16 0 0.16 0 0.25 U 0.16 0 0.25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.24 2.32 0.04 U 13.34 U 11.43	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Baryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Calcium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved Solium, dissolved	11 11 9 No. of Samples 1 <	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.23.00 U 0.25 0.04 U 0.25 0.04 0.05 0.04 0.05 0.04 0.05 0.04 0.05 0.05	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.24 1.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.25	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 8/3/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.24 2.32 0.04 U 13.34 U 11.43 5,953	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Lead, dissolved Lithium, dissolved Lithium, dissolved Magnesium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Selenium, dissolved Selenium, dissolved Sodium, dissolved	11 11 9 No. of Samples 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 <	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.300 2.46	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16	5,748 8.80 8.80 517.10 0.06 U 0.25 U 1.71 U 0.30 U 0.30 U 0.30 U 0.30 U 0.30 U 0.30 U 0.4 U 0.24 1.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 0.04	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.24 2.32 0.04 U 13.34 U 11.43 5.953 1.51	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Conductivity, Field pH, Field Temperature (°C), Field Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Calcium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Marcury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	11 11 9 No. of Samples 1 <	31,690 9.00 23.20 552.30 High 0.06 U 0.25 U 15.60 U 15.60 U 8.00 U 0.16 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.24 2.90 0.04 U 0.23.00 U 0.25 0.04 U 0.25 0.04 0.05 0.04 0.05 0.04 0.05 0.04 0.05 0.05	5/1/17 7/11/16 7/11/16 2/1/17 Date 7/11/16	5,748 8.80 8.80 517.10 Low 0.06 U 0.25 U 1.71 U 0.30 U 0.30 U 0.16 0.04 U 0.24 1.90 0.04 U 0.24 1.90 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.04 U 0.25	7/11/16 1/2/17 1/2/17 8/3/16 Date 7/11/16 8/3/16	20,033 8.92 12.89 545.97 Average 0.06 U 0.25 U 9.48 U 2.75 U 0.16 0.04 U 0.24 2.32 0.04 U 0.24 2.32 0.04 U 13.34 U 11.43 5,953	units (°C) Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 30: BG-8 (DS-4) Annual B-Groove Aquifer – Formerly DS-4 – P&A'ed May 2017

DAUB & ASSOCIATES, INC. 2013 A CONTRACTOR



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	ingn	Duto	2011	Dato	/ Worugo	01110
Bicarbonate as CaCO3	60	806.00	12/16/92	356.00	2/26/91	635.65	mg/l
Carbonate as CaCO3	60	754.00	9/27/90	10.00	6/16/92	103.64	
							mg/l
Total Alkalinity as	60	1,064.00	9/27/90	375.00	9/7/90	715.07	mg/l
Bromide	30	2.60	9/7/90	0.06	5/26/00	0.82	mg/l
Cation-Anion Balance	58	11.10	5/29/02	-9.40	7/29/09	0.66	%
Sum of Anions	52	24.21	9/27/90	12.00	5/26/04	16.38	meq/l
Sum of Cations	52	23.84	9/27/90	13.00	5/26/04	16.53	meq/l
Chemical Oxygen	22	550.00	7/29/09	11.00	8/24/17	162.14	mg/l
Chloride	59	524.00	9/7/90	11.00	6/30/95	41.30	mg/l
Conductivity, Lab	58	1,660.00	9/8/93	1,050.00	3/22/93	1,436.47	µmhos
Fluoride	60	32.00	9/28/94	2.80	5/28/91	21.51	mg/l
Hardness as CaCO3	58	59.00	9/27/90	3.00	6/30/09	10.81	mg/l
Nitrate as N, dissolved	29	1.99	6/14/08	0.02	6/30/95	0.23	mg/l
Nitrate/Nitrite as N,	29	2.13	6/14/08	0.02	9/28/94	0.24	mg/l
Nitrite as N, dissolved	29	0.14	6/14/08	0.01	10/3/12	0.08	mg/l
Nitrogen, Ammonia	29	5.70	5/9/01	0.58	5/21/07	1.17	mg/l
Nitrogen, Organic	29	34.70	7/29/09	0.92	5/9/01	9.60	mg/l
Nitrogen, Total Kjeldahl	29	35.50	7/29/09	3.40	9/7/90	10.74	mg/l
pH, lab	58	11.60	12/20/93	8.40	12/30/96	8.87	units
Phosphate, total	29	0.90	9/7/90	0.03	5/26/00	0.15	mg/l
	29	0.30	9/7/90			0.15	
Phosphorus, total				0.01	6/18/96		mg/l
SAR in Water	48	92.00	11/27/02	29.17	9/27/90	53.40	none
Sulfate	60	140.00	6/14/08	2.00	5/28/91	17.55	mg/l
Sulfide	29	0.80	9/7/90	0.01	5/26/04	0.14	mg/l
Total Dissolved Solids	59	1,428.00	9/27/90	690.00	5/29/03	918.20	mg/l
Conductivity, Field	82	3,803.00	9/1/09	982.00	11/21/05	1,544.80	µmhos
pH, Field	81	12.00	9/27/90	8.02	11/6/14	9.35	units
Temperature (°C), Field	39	16.20	6/14/08	8.00	12/1/90	12.21	(°C)
Water Level, Field	51	435.60	8/24/17	398.45	11/1/90	407.89	Ft.
	51	435.60	8/24/17		11/1/90		Ft.
Water Level, Field	51 No. of	435.60	8/24/17	398.45	11/1/90	407.89	Ft.
Water Level, Field Parameters	51	435.60	8/24/17	398.45	11/1/90	407.89	Ft. Units
Water Level, Field Parameters Metals Aluminum, dissolved	51 No. of Samples 28	435.60 High 3.79	8/24/17 Date 9/27/90	398.45	11/1/90 Date 5/26/04	407.89 Average 0.72	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved	51 No. of <u>Samples</u> 28 28	435.60 High 3.79 0.03	8/24/17 Date 9/27/90 9/27/90	398.45 Low U U	11/1/90 Date 5/26/04 5/26/04	407.89 Average 0.72 0.01	Ft. Units mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	51 No. of <u>Samples</u> 28 28 28 28	435.60 High 3.79 0.03 0.43	8/24/17 Date 9/27/90 9/27/90 8/24/17	398.45 Low U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90	407.89 Average 0.72 0.01 0.21	Ft. Units mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	51 No. of Samples 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16	398.45 Low U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16	407.89 Average 0.72 0.01 0.21 U	Ft. Units mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	51 No. of Samples 28 28 28 28 28 28 60	435.60 High 3.79 0.03 0.43 U 0.72	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91	398.45 Low U U U U U 0.19	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93	407.89 Average 0.72 0.01 0.21 U 0.57	Ft. Units mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	51 No. of 28 28 28 28 28 60 28	435.60 High 3.79 0.03 0.43 U 0.72 U	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16	398.45 Low U U U U U 0.19 U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16	407.89 Average 0.72 0.01 0.21 U 0.57 U	Ft. Units mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	51 No. of Samples 28 28 28 28 28 60 28 60 28 60	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90	398.45 Low U U U U U 0.19 U 0.00	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	51 No. of 28 28 28 28 28 28 60 28 60 28 60 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90	398.45 Low U U U U U 0.19 U 0.00 U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	51 No. of 28 28 28 28 28 60 28 60 28 60 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13	398.45 Low U U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	51 No. of 28 28 28 28 28 60 28 60 28 60 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/27/90 10/22/13 11/6/14	398.45 Low U U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	51 No. of 28 28 28 28 60 28 60 28 60 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16	398.45 Low U U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90	398.45 Low U U U U U U 0.19 U 0.00 U U U U U U U U 0.00 U U U U 0.00 U U U 0.00 U U 0.00 0.00 0.00 U 0.000 0.00 0.0000 0.00000 0.0000 0.0000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000000	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90	398.45 Low U U U U U 0.19 U 0.00 U U U U U U U 0.06 U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 9/27/90 7/31/91	398.45 Low U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 9/27/90 7/31/91 3/22/16	398.45 Low U U U U U 0.19 U 0.00 U U U U U 0.06 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 9/27/90 7/31/91	398.45 Low U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01 U	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 7/31/91 3/22/16 3/22/16	398.45 Low U U U U U 0.19 U 0.00 U U U U U 0.06 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16 3/22/16	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01 U	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01 U U U 0.02	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 7/31/91 3/22/16 3/22/16 6/23/94	398.45 Low U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16 3/22/16 6/23/94	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01 U U 0.01 U 0.01 0.05 0.01 0.01 0.21 0.01 0.21 0.01 0.21 0.01 0.21 0.01 0.21 0.01 0.57 0.01 0.01 0.57 0.01 0.57 0.01 0.01 0.57 0.01 0.01 0.57 0.01 0.05 0.05 0.01 0.05 0.01 0.05 0	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01 U U 0.01 U 0.02 13.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 7/31/91 3/22/16 3/22/16 6/23/94 9/7/90	398.45 Low U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16 3/22/16 6/23/94 11/16/04	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01 U U 0.02 1.81	Ft. Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01 U U 0.02 13.00 0.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/27/90 9/27/90 7/31/91 3/22/16 3/22/16 6/23/94 9/7/90 9/27/90	398.45 Low U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16 3/22/16 6/23/94 11/16/04 7/31/91	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01 U U 0.02 1.81 0.00	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	51 No. of Samples 28 28 28 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01 U U 0.02 13.00 0.00 63.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 7/31/91 3/22/16 3/22/16 6/23/94 9/7/90 9/27/90 9/27/90	398.45 Low U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16 3/22/16 6/23/94 11/16/04 7/31/91 12/20/93	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01 U U 0.02 1.81 0.00 17.54	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Copper, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Sodium, dissolved	51 No. of Samples 28 28 28 28 60 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01 U U 0.02 13.00 0.00 63.00 508.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 9/27/90 9/27/90 7/31/91 3/22/16 3/22/190 9/27/90 9/27/90	398.45 Low U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16 3/22	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01 U U 0.02 1.81 0.00 17.54 369.62	Ft. Units mg/l
Water Level, Field Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	51 No. of Samples 28 28 28 28 60 28 28 28 28 28 28 28 28 28 28 28 28 28	435.60 High 3.79 0.03 0.43 U 0.72 U 12.00 0.01 U 0.24 0.32 0.13 7.00 0.01 U U 0.02 13.00 0.00 63.00	8/24/17 Date 9/27/90 9/27/90 8/24/17 3/22/16 1/31/91 3/22/16 9/27/90 9/7/90 10/22/13 11/6/14 3/22/16 9/7/90 9/27/90 7/31/91 3/22/16 3/22/16 6/23/94 9/7/90 9/27/90 9/27/90	398.45 Low U U U U U 0.19 U 0.00 U U U U U U U U U U U U U	11/1/90 Date 5/26/04 5/26/04 9/7/90 3/22/16 12/20/93 3/22/16 2/26/91 9/7/90 10/22/13 5/26/99 6/23/94 9/15/92 2/26/91 7/31/91 3/22/16 3/22/16 6/23/94 11/16/04 7/31/91 12/20/93	407.89 Average 0.72 0.01 0.21 U 0.57 U 2.27 0.01 U 0.05 0.15 0.08 1.19 0.01 U U 0.02 1.81 0.00 17.54	Ft. Units mg/l

Table 31: IRI-6 Annual B-Groove Aquifer

DAUB & ASSOCIATES, INC. 2019 Stand Contraction



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Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples						
Bicarbonate as CaCO3	138	66,300.00	8/21/03	3,970.00	11/18/06	42,689.56	mg/l
Carbonate as CaCO3	138	33,400.00	8/5/99	130.00	11/18/06	3,967.83	mg/l
Total Alkalinity as	138	68,800.00	8/21/03	4,100.00	11/18/06	46,306.57	mg/l
Bromide	18	3.00	5/18/06	3.00	5/18/06	3.00	mg/l
Cation-Anion Balance	138	80.00	11/18/06	-67.20	9/15/07	-2.64	%
Sum of Anions	138	1,420.00	8/21/03	105.00	11/18/06	949.65	meq/l
Sum of Cations	138	1,200.00	5/29/02	193.00	9/15/07	903.31	meq/l
Chemical Oxygen	17	1,100.00	7/29/09	100.00	9/14/00	287.86	mg/l
Chloride	138	1,380.00	10/16/13	105.00	4/11/06	753.70	mg/l
Conductivity, Lab	138	62,100.00	9/25/02	5,220.00	2/8/00	48,556.42	µmhos
Fluoride	138	123.00	3/25/98	8.60	4/11/06	51.79	mg/l
Hardness as CaCO3	138	150.00	11/16/07	1.00	3/25/98	36.70	mg/l
Nitrate as N, dissolved	18	0.96	9/25/02	U	9/24/03	0.10	mg/l
Nitrate/Nitrite as N,	18	1.65	9/25/02	U	9/24/03	0.16	mg/l
Nitrite as N, dissolved	18	0.87	9/25/02	U	9/24/03	0.11	mg/l
Nitrogen, Ammonia	17	16.30	9/26/01	3.75	9/14/00	11.74	mg/l
Nitrogen, Organic	17	16.40	7/29/09	1.90	9/24/03	6.33	mg/l
Nitrogen, Total Kjeldahl	17	26.10	7/29/09	1.70	9/14/00	14.60	mg/l
pH, lab	138	9.10	10/14/08	8.20	6/9/99	8.48	units
Phosphate, total	17	77.50	5/18/06	1.55	10/14/08	34.58	mg/l
Phosphorus, total	17	18.80	9/15/07	3.00	10/14/08	10.79	mg/l
SAR in Water	132	7,600.00	3/25/98	801.00	11/16/07	2,291.63	none
Sulfate	138	1,040.00	12/16/02	10.00	9/27/05	132.03	mg/l
Sulfide	17	3.50	9/2/98	0.05	8/25/05	1.56	mg/l
Total Dissolved Solids	138	66,600.00	8/21/03	20,800.00	12/8/00	49,927.01	mg/l
Conductivity, Field	143	62,200.00	2/14/06	26,900.00	12/1/08	51,933.66	µmhos
pH, Field	143	10.29	6/1/09	7.00	3/4/15	8.53	units
Temperature (°C), Field	96	23.77	6/15/11	6.30	3/4/13	13.07	(°C)
Water Level, Field	147						
			8/7/17	521.20	1/26/16		
Water Eevel, Hield	147	566.13	8/7/14	521.20	1/26/16	553.26	Ft.
						•	
Parameters	No. of	High	8/7/14 Date	521.20 Low	1/26/16 Date	Average	Units
Parameters Metals	No. of Samples	High	Date	Low	Date	Average	Units
Parameters Metals Aluminum, dissolved	No. of Samples	High 1.60	Date 9/23/10	Low U	Date 3/14/08	Average	Units mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved	No. of Samples 18 18	High 1.60 U	Date 9/23/10 11/27/12	Low U U	Date 3/14/08 11/27/12	Average 1.09 U	Units mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 18 18 18 18	High 1.60 U 3.85	Date 9/23/10 11/27/12 3/14/08	Low U U 0.06	Date 3/14/08 11/27/12 10/14/08	Average 1.09 U 1.70	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 18 18 18 18 18	High 1.60 U 3.85 U	Date 9/23/10 11/27/12 3/14/08 11/27/12	Low U U 0.06 U	Date 3/14/08 11/27/12 10/14/08 11/27/12	Average 1.09 U 1.70 U	Units mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	No. of Samples 18 18 18 18 18 18 137	High 1.60 U 3.85 U 43.40	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03	Low U U 0.06 U 6.60	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07	Average 1.09 U 1.70 U 30.26	Units mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	No. of Samples 18 18 18 18 18 137 18	High 1.60 U 3.85 U 43.40 U	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12	Low U U 0.06 U 6.60 U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12	Average 1.09 U 1.70 U 30.26 U	Units mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	No. of Samples 18 18 18 18 137 18 137	High 1.60 U 3.85 U 43.40 U 60.00	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07	Low U U 0.06 U 6.60 U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04	Average 1.09 U 1.70 U 30.26 U 13.29	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/27/12 11/16/07 9/23/10	Low U U 0.06 U 6.60 U U U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10	Average 1.09 U 1.70 U 30.26 U 13.29 0.40	Units mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 137 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04	Low U U 0.06 U 6.60 U U U U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98	Low U U 0.06 U 6.60 U U U U U U 0.24	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08	Low U U 0.06 U 6.60 U U U U U U 0.24 U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 137 18 18 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08	Low U U 0.06 U 6.60 U U U U U 0.24 U 1.00	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 18 18 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 9/8/15	Low U U 0.06 U 6.60 U U U U U U 0.24 U 1.00 U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 18 18 18 137 18 137 18 137 18 18 18 18 18 18 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 9/8/15 10/14/08	Low U U 0.06 U 6.60 U U U U U 0.24 U 0.24 U 1.00 U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 18 18 18 18 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 3/14/08 9/8/15 10/14/08 11/27/12	Low U U 0.06 U 6.60 U U U U U 0.24 U 0.24 U 1.00 U U U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 10/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 18 137 18 18 137 18 18 137 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U 0.50	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 3/14/08 10/14/08 11/27/12 9/23/10	Low U 0.06 U 6.60 U U U 0.24 U 1.00 U U U U U U U U U U U U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 11/27/12 3/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 137 18 18 137 18 18 137 18 18 137 18 18 137 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U 0.50 0.23	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 11/27/12 9/23/10 3/14/08	Low U U 0.06 U 6.60 U U U U 0.24 U 1.00 U U U U U U U U U U U U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 11/27/12 3/14/08 3/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40 0.42	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved	No. of Samples 18 18 18 18 137 18 137 18 18 18 18 18 18 18 137 18 18 18 18 18 18 18 18 18 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U 0.50 0.23 60.00	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12	Low U U 0.06 U 6.60 U U U U 0.24 U 1.00 U U U U U U U 1.40	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 11/27/12 3/14/08 11/27/12 3/14/08 10/14/08 10/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40 0.23 30.31	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	No. of Samples 18 18 18 18 137 18 137 18 18 18 18 18 18 18 137 18 18 18 18 18 137 18 18 18 18 18 18 18 18 18 18 18 18 18	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U 0.50 0.23 60.00 0.00	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08	Low U U 0.06 U 6.60 U U U U 0.24 U 1.00 U U U U U U U U U U U U U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 11/27/12 3/14/08 11/27/12 3/14/08 10/14/08 10/14/08 10/14/08 10/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40 0.23 30.31 0.00	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 137 18 18 137 18 18 137 18 18 137 18 18 137	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U 0.50 0.23 60.00 0.00 50.00	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08 11/30/11 9/30/97 6/2/98	Low U U 0.06 U 6.60 U U U U 0.24 U 0.24 U 1.00 U U U U U 1.40 U 3.60	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 11/27/12 3/14/08 10/14/08 3/14/08 10/14/08 10/14/08 3/14/08 10/14/08 9/30/97 4/11/06	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40 0.23 30.31 0.00 26.98	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 137 18 18 137 18 18 137 18 137 18 137 137	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U 0.50 0.23 60.00 0.00 50.00 29,800.00	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08 11/30/11 9/30/97 6/2/98 4/19/01	Low U U 0.06 U 6.60 U U U U 0.24 U 1.00 U U U U U 11.40 U 3.60 4,370.00	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 11/27/12 3/14/08 10/14/08 3/14/08 10/14/08 9/30/97 4/11/06 9/15/07	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40 0.23 30.31 0.00 26.98 20,562.55	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Selenium, dissolved Silica, dissolved Strontium, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 137 18 18 137 18 18 137 18 18 137 137 137	High	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08 11/30/11 9/30/97 6/2/98 4/19/01 8/4/97	Low U U 0.06 U 6.60 U U U U 0.24 U 0.24 U 1.00 U U U U 1.40 U U 11.40 U 3.60 4,370.00 U	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 10/14/08 11/27/12 3/14/08 10/14/08 11/27/12 3/14/08 10/14/08 10/14/08 9/30/97 4/11/06 9/15/07 10/14/08	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40 0.23 30.31 0.00 26.98 20,562.55 0.25	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Parameters Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Marcury, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 18 18 18 18 137 18 137 18 137 18 18 18 18 18 137 18 18 137 18 18 137 18 137 18 137 137	High 1.60 U 3.85 U 43.40 U 60.00 0.40 0.60 1.20 0.28 12.70 10.00 0.01 U 0.50 0.23 60.00 0.00 50.00 29,800.00	Date 9/23/10 11/27/12 3/14/08 11/27/12 1/28/03 11/27/12 11/16/07 9/23/10 9/14/04 9/2/98 3/14/08 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08 11/27/12 9/23/10 3/14/08 11/30/11 9/30/97 6/2/98 4/19/01	Low U U 0.06 U 6.60 U U U U 0.24 U 1.00 U U U U U 11.40 U 3.60 4,370.00	Date 3/14/08 11/27/12 10/14/08 11/27/12 9/15/07 11/27/12 8/12/04 9/23/10 9/2/98 10/14/08 3/14/08 9/15/07 3/14/08 10/14/08 11/27/12 3/14/08 10/14/08 3/14/08 10/14/08 9/30/97 4/11/06 9/15/07	Average 1.09 U 1.70 U 30.26 U 13.29 0.40 0.45 0.64 0.28 4.58 4.82 0.01 U 0.40 0.23 30.31 0.00 26.98 20,562.55	Units mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 32: DS-2 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 201 HE SALVER COUDER



Deveryor		1 0 2 0				A	11 14
Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples		- / /				
Bicarbonate as CaCO3	171	43,000	5/24/05	17,400	11/27/02	26,293	mg/l
Carbonate as CaCO3	171	23,900	5/3/08	419	6/26/02	3,073	mg/l
Total Alkalinity as	171	60,100	3/14/08	21,900	6/11/14	29,195	mg/l
Bromide	27	5.00	5/3/08	0.70	8/2/06	2.18	mg/l
Cation-Anion Balance	171	13.50	10/28/02	-93.80	4/10/13	-5.19	%
Sum of Anions	171	1,320.00	3/14/08	511.00	4/29/03	720.75	meq/l
Sum of Cations	171	1,730.00	3/14/08	20.70	4/10/13	665.17	meq/l
Chemical Oxygen	27	1,100.00	7/30/09	140.00	8/21/03	422.50	mg/l
Chloride	171	12,200	5/10/16	39	5/24/05	4,772	mg/l
Conductivity, Lab	171	67,300	5/10/16	27,200	9/28/06	44,102	µmhos
Fluoride	171	98.80	5/10/16	2.80	5/24/05	55.64	mg/l
Hardness as CaCO3	171	49.00	3/8/11	1.00	1/28/03	15.44	mg/l
Nitrate as N, dissolved	27	0.10	8/12/04	0.02	9/28/06	0.05	mg/l
Nitrate/Nitrite as N,	27	0.14	11/10/14	0.02	9/28/06	0.05	mg/l
Nitrite as N, dissolved	27	0.05	11/10/14	0.01	7/11/13	0.03	mg/l
Nitrogen, Ammonia	27	24.80	3/14/08	6.11	7/10/17	11.28	mg/l
Nitrogen, Organic	27	28.00	8/22/02	0.80	9/30/08	7.88	mg/l
Nitrogen, Total Kjeldahl	27	44.00	3/14/08	3.50	9/23/10	17.88	mg/l
pH, lab	171	9.20	4/10/08	7.90	10/28/02	8.57	units
Phosphate, total	27	155.00	7/30/09	3.10	8/16/11	28.20	mg/l
Phosphorus, total	27	183.00	9/30/08	3.20	6/26/07	13.64	mg/l
	149		5/18/06		12/9/14	2,466	
SAR in Water	149	8,450	9/23/10	0.00	9/2/15		none
Sulfate Sulfide		1,860		0.00		206	mg/l
	27	3.20	9/28/06	0.04	8/25/05	1.28	mg/l
Total Dissolved Solids	171	88,500	3/14/08	18,500	5/29/03	38,260	mg/l
Conductivity, Field	193	66,580	5/10/16	30,600	4/29/03	48,667	µmhos
pH, Field	193	9.91	6/30/09	7.00	3/9/16	8.42	units
Temperature (°C), Field	192	24.40	7/5/16	5.30	2/9/12	12.95	(°C)
Water Level, Field	190	543.10	9/7/14	484.10	2/4/16	521.75	Ft.
_		<u> </u>		-			
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples				- / /		
Aluminum, dissolved	28	79.90	8/12/04	U	3/14/08	17.00	mg/l
Arsenic, dissolved	28	U	12/4/12	U	12/4/12	U	mg/l
Barium, dissolved							
	28	3.32	8/25/05	0.19	8/19/07	1.84	mg/l
Beryllium, dissolved	28 28	3.32 U	4/12/16	U	4/12/16	U	mg/l
	28 28 172	3.32			4/12/16 5/29/03		
Beryllium, dissolved	28 28	3.32 U	4/12/16	U	4/12/16	U	mg/l mg/l
Beryllium, dissolved Boron, dissolved	28 28 172	3.32 U 46.20	4/12/16 5/10/16	U 3.69	4/12/16 5/29/03	U 14.19	mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	28 28 172 28 172	3.32 U 46.20 U 14.00	4/12/16 5/10/16 4/12/16 7/10/17	U 3.69 U	4/12/16 5/29/03 4/12/16 5/29/03	U 14.19 U 4.13	mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved	28 28 172 28	3.32 U 46.20 U	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06	U 3.69 U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06	U 14.19 U	mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	28 28 172 28 172 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20	4/12/16 5/10/16 4/12/16 7/10/17	U 3.69 U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04	U 14.19 U 4.13 0.01	mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	28 28 172 28 172 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07	U 3.69 U U U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06	U 14.19 U 4.13 0.01 0.85 1.49	mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	28 28 172 28 172 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02	U 3.69 U U U U U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08	U 14.19 U 4.13 0.01 0.85 1.49 0.81	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08	U 3.69 U U U U U 2.80	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 28 28 28 172	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 1/8/08	U 3.69 U U U U 2.80 U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 1/8/08 4/12/16	U 3.69 U U U U U 2.80 U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 28 172 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 1/8/08 4/12/16 4/12/16	U 3.69 U U U U U 2.80 U U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 4/12/16	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Mercury, dissolved Molybdenum, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 172 28 28 28 28 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U 0.70	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 1/8/08 4/12/16 8/19/07	U 3.69 U U U U U 2.80 U U U U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 8/18/10	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 172 28 28 28 28 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U 0.70 0.20	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 1/8/08 4/12/16 4/12/16 8/19/07 9/23/10	U 3.69 U U U U U 2.80 U U U U U U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 4/12/16 8/18/10 5/18/06	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45 0.13	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 172 28 28 28 28 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U 0.70 0.20 109.00	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 4/12/16 4/12/16 8/19/07 9/23/10 3/14/08	U 3.69 U U U U U 2.80 U U U U U U U U U U 0.00	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 8/18/10 5/18/06 11/21/08	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45 0.13 29.18	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U 0.70 0.20 109.00 0.01	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 4/12/16 8/19/07 9/23/10 3/14/08 8/22/02	U 3.69 U U U U U 2.80 U U U U U U U U U U U U U U U U U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 8/18/10 5/18/06 11/21/08 7/12/07	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45 0.13 29.18 0.01	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U 0.70 0.20 109.00 0.01 79.00	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 4/12/16 8/19/07 9/23/10 3/14/08 8/22/02 4/11/06	U 3.69 U U U U U 2.80 U U U U U U U U U 0.00 U 8.90	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 8/18/10 5/18/06 11/21/08 7/12/07 5/29/03	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45 0.13 29.18 0.01 24.78	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved Sodium, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 172 28 28 28 28 28 28 28 28 28 28 28 28 172 28 172 28 172 28 172	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U U 0.70 0.20 109.00 0.01 79.00 39,200	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 4/12/16 8/19/07 9/23/10 3/14/08 8/22/02 4/11/06 3/14/08	U 3.69 U U U U 2.80 U U U U U U 0.00 U 8.90 450	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 8/18/10 5/18/06 11/21/08 7/12/07 5/29/03 4/10/13	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45 0.13 29.18 0.01 24.78 15,243	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved Sodium, dissolved Sodium, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 28 28 28 28 28 28	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U U 0.70 0.20 109.00 0.01 79.00 39,200 0.70	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 4/12/16 8/19/07 9/23/10 3/14/08 8/22/02 4/11/06 3/14/08 2/21/05	U 3.69 U U U U U 2.80 U U U U U U 0.00 U 8.90 450 U	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 8/18/10 5/18/06 11/21/08 7/12/07 5/29/03 4/10/13 5/29/03	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45 0.13 29.18 0.01 24.78 15,243 0.22	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved Sodium, dissolved	28 28 172 28 172 28 28 28 28 28 28 28 172 28 28 28 28 28 28 28 28 28 28 28 28 172 28 172 28 172 28 172	3.32 U 46.20 U 14.00 0.01 1.20 3.70 1.40 8.48 10.00 U U U 0.70 0.20 109.00 0.01 79.00 39,200	4/12/16 5/10/16 4/12/16 7/10/17 5/18/06 8/16/11 9/15/07 8/22/02 3/14/08 4/12/16 8/19/07 9/23/10 3/14/08 8/22/02 4/11/06 3/14/08	U 3.69 U U U U 2.80 U U U U U U 0.00 U 8.90 450	4/12/16 5/29/03 4/12/16 5/29/03 5/18/06 8/12/04 5/18/06 3/14/08 7/12/07 9/2/15 4/12/16 8/18/10 5/18/06 11/21/08 7/12/07 5/29/03 4/10/13	U 14.19 U 4.13 0.01 0.85 1.49 0.81 3.43 3.99 U U U 0.45 0.13 29.18 0.01 24.78 15,243	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 33: DS-3 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 20 N 10 10 10 10 10



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	ingn	Date	LOw	Date	Average	Units
Bicarbonate as CaCO3	85	23,700	7/6/17	15,000	12/10/14	19,135	mg/l
Carbonate as CaCO3	85	3,830	6/9/15	528	11/1/17	2,000	mg/l
	85	24,200	5/10/17	16,100	12/10/14	21,111	mg/l
Total Alkalinity as					4/12/16		
Bromide	9	<u>U</u>	4/12/16	U		U 5.40	mg/l
Cation-Anion Balance	85	4.50	1/20/11	-17.90	10/11/11	-5.40	%
Sum of Anions	85	604.00	1/14/11	374.00	1/6/15	462.38	meq/l
Sum of Cations	85	551.00	12/4/17	288.00	12/10/14	415.89	meq/l
Chemical Oxygen	9	289.00	7/6/17	80.00	8/11/11	128.25	mg/l
Chloride	85	2,660	5/10/17	631	6/11/14	1,250	mg/l
Conductivity, Lab	85	36,300	5/10/17	24,700	1/11/16	29,161	µmhos
Fluoride	85	76.60	1/6/15	42.40	9/17/12	60.85	mg/l
Hardness as CaCO3	84	41.30	12/10/15	5.00	2/6/17	20.21	mg/l
Nitrate as N, dissolved	9	0.04	8/11/11	0.02	12/4/12	0.03	mg/l
Nitrate/Nitrite as N,	9	0.07	1/14/11	0.03	1/20/11	0.05	mg/l
Nitrite as N, dissolved	9	0.04	1/14/11	0.01	12/4/12	0.02	mg/l
Nitrogen, Ammonia	9	8.70	1/20/11	4.23	11/10/14	6.36	mg/l
Nitrogen, Organic	9	8.00	7/6/17	0.80	12/13/12	4.51	mg/l
Nitrogen, Total Kjeldahl	9	14.00	7/6/17	7.80	12/13/12	10.82	mg/l
pH, lab	85	8.90	12/18/13	8.40	11/1/17	8.65	units
Phosphate, total	9	77.50	1/20/11	1.90	7/6/17	18.42	mg/l
Phosphorus, total	9	4.57	8/11/11	0.60	7/6/17	3.56	
	66		2/6/17		9/7/14		mg/l
SAR in Water		2,000		0.00		948	none
Sulfate	85	6,450	1/14/11	13.30	4/9/14	825	mg/l
Sulfide	9	3.20	11/10/14	0.40	1/14/11	1.55	mg/l
Total Dissolved Solids	85	31,400	1/14/11	18,300	12/10/14	23,736	mg/l
Conductivity, Field	88	54,810	2/10/16	25,060	12/10/14	30,327	µmhos
pH, Field	88	9.48	12/14/11	7.20	3/9/16	8.29	units
Temperature (°C), Field	88	24.00	7/8/14	5.00	1/12/12	13.07	(°C)
Water Level, Field	86	568.90	10/1/11	443.70	4/10/13	516.77	Ft.
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	No. of Samples	-				-	
Metals Aluminum, dissolved	Samples 9	0.40	1/14/11	U	1/14/11	0.40	mg/l
Metals	Samples 9 9	-	1/14/11 12/4/12			-	
Metals Aluminum, dissolved	Samples 9	0.40	1/14/11	U	1/14/11	0.40	mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	Samples 9 9 9	0.40	1/14/11 12/4/12 7/6/17	U U	1/14/11 10/12/15 1/14/11	0.40 0.01	mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	Samples 9 9 9 9 9 9 9 9	0.40 0.02 2.13 U	1/14/11 12/4/12	U U 0.99 U	1/14/11 10/12/15 1/14/11 4/12/16	0.40 0.01 1.54 U	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	Samples 9 9 9 9 85	0.40 0.02 2.13	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17	U U 0.99	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11	0.40 0.01 1.54 U 12.58	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	Samples 9 9 9 9 85 9	0.40 0.02 2.13 U 15.70 U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16	U U 0.99 U 10.10 U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16	0.40 0.01 1.54 U 12.58 U	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	Samples 9 9 9 9 9 9 9 9 85 9 85 9 85	0.40 0.02 2.13 U 15.70	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11	U U 0.99 U 10.10 U U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14	0.40 0.01 1.54 U 12.58 U 3.47	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	Samples 9 9 9 9 9 9 9 85 9 85 9 85 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16	U U 0.99 U 10.10 U U U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	Samples 9 9 9 9 9 85 9 85 9 85 9 85 9 85 9 85 9 85	0.40 0.02 2.13 U 15.70 U 11.00 U U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 4/12/16	U U 0.99 U 10.10 U U U U U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	Samples 9 9 9 9 9 85 9 85 9 85 9 9 9 9 9 9 9 9 9 9 9 9 9 9	0.40 0.02 2.13 U 15.70 U 11.00 U U U 2.20	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 4/12/16 1/14/11	U U 0.99 U 10.10 U U U U U 0.50	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11	0.40 0.01 1.54 U 12.58 U 3.47 U U U 1.25	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	Samples 9 9 9 9 9 85 9 85 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	0.40 0.02 2.13 U 15.70 U 11.00 U U U 2.20 U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16	U U 0.99 U 10.10 U U U U U 0.50 U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U U U 1.25 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	Samples 9 9 9 9 85 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 4.70	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 1/14/11 1/10/14	U U 0.99 U 10.10 U U U U 0.50 U 3.90	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U U 4.28	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	Samples 9 9 9 9 85 9<	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 2.20 U 4.70 7.00	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15	U U 0.99 U 10.10 U U U U U 0.50 U 3.90 U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U U 4.28 4.03	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	Samples 9 9 9 9 85 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 2.20 U 4.70 7.00 U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16	U U 0.99 U 10.10 U U U U U 0.50 U 3.90 U U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U U 4.28 4.03 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	Samples 9 9 9 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 2.20 U 4.70 7.00 U U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 4/12/16	U U 0.99 U 10.10 U U U U U 0.50 U 3.90 U U U U U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U U 1.25 U 4.28 4.03 U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved	Samples 9 9 9 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 2.20 U 4.70 7.00 U U U U 1.00	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/12/16 1/14/11	U U 0.99 U 10.10 U U U U U 0.50 U 3.90 U U U U U 0.20	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 4/12/16 8/11/11	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U U 1.25 U 4.28 4.03 U U U 0.73	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	Samples 9 9 9 9 9 85 9<	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 4.70 7.00 U 4.70 7.00 U U U 1.00 U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/14/11 4/12/16	U U 0.99 U 10.10 U U U U U 0.50 U 3.90 U U U U U U U U U U U U U U U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 8/11/11 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U U 1.25 U 4.28 4.03 U U U 0.73 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Potassium, dissolved	Samples 9 9 9 9 85 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 2.20 U 4.70 7.00 U U U 1.00 U 45.00	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/14/11 4/12/16 1/14/11 4/12/16 1/20/11	U U 0.99 U 10.10 U U U U U 0.50 U U 3.90 U U U U U 0.20 U 18.00	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 8/11/11 4/12/16 8/11/11 4/12/16 7/13/11	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U 1.25 U 4.28 4.03 U U U 0.73 U 25.15	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	Samples 9 9 9 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 4.70 7.00 U 4.70 7.00 U U 1.00 U 45.00 U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/14/11 4/12/16 1/20/11 4/12/16	U U 0.99 U 10.10 U U U U U U U U U U U U U U U U U U 18.00 U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 8/11/11 4/12/16 7/13/11 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U 4.28 4.03 U U 0.73 U 25.15 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Potassium, dissolved	Samples 9 9 9 9 85 9 85 9 85 9 85 9 85	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 2.20 U 4.70 7.00 U U U 1.00 U 45.00	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/14/11 4/12/16 1/20/11 4/12/16 4/12/16 1/20/11	U U 0.99 U 10.10 U U U U U 0.50 U U 3.90 U U U U U 0.20 U 18.00	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 8/11/11 4/12/16 7/13/11 4/12/16 3/6/17	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U 1.25 U 4.28 4.03 U U U 0.73 U 25.15	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	Samples 9 9 9 9 85 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 4.70 7.00 U 4.70 7.00 U U 1.00 U 45.00 U	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/14/11 4/12/16 1/20/11 4/12/16	U U 0.99 U 10.10 U U U U U U U U U U U U U U U U U U 18.00 U	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 8/11/11 4/12/16 7/13/11 4/12/16	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U 4.28 4.03 U U 0.73 U 25.15 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Sodium, dissolved	Samples 9 9 9 9 85 9 85 9 9 9 9 9 9 9 9 9 9 9 9	0.40 0.02 2.13 U 15.70 U 11.00 U U 2.20 U 4.70 7.00 U U 1.00 U 1.00 U 4.5.00 U 30.00	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/14/11 4/12/16 1/20/11 4/12/16 4/12/16 1/20/11 4/12/16	U U 0.99 U 10.10 U U U U U U U U U U U U U U U U U U 15.00	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 8/11/11 4/12/16 7/13/11 4/12/16 3/6/17	0.40 0.01 1.54 U 12.58 U 3.47 U U 1.25 U 4.28 4.03 U U 0.73 U 25.15 U 20.08	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 9 9 9 9 85 9 85 9 85 9 85 9 85	0.40 0.02 2.13 U 15.70 U 11.00 U 2.20 U 4.70 7.00 U 4.70 7.00 U 1.00 U 4.5.00 U 30.00 12,500	1/14/11 12/4/12 7/6/17 4/12/16 12/4/17 4/12/16 6/14/11 4/12/16 1/14/11 4/12/16 11/10/14 12/10/15 4/12/16 1/14/11 4/12/16 1/20/11 4/12/16 4/12/16 1/20/11	U U 0.99 U 10.10 U U U U U U U U U U U U U U U U U 18.00 U 15.00 6,530	1/14/11 10/12/15 1/14/11 4/12/16 10/11/11 4/12/16 12/10/14 4/12/16 8/11/11 4/12/16 12/4/12 9/2/15 4/12/16 8/11/11 4/12/16 7/13/11 4/12/16 3/6/17 12/10/14	0.40 0.01 1.54 U 12.58 U 3.47 U 1.25 U 1.25 U 4.28 4.03 U U 0.73 U 25.15 U 20.08 9,432	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 34: DS-5 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 20 N 510 VIIII



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Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples						
Bicarbonate as CaCO3	27	8,220	9/27/16	5,770	12/7/17	6,818	mg/l
Carbonate as CaCO3	27	4,870	12/7/17	2,730	9/27/16	3,908	mg/l
Total Alkalinity as	27	11,800	10/4/17	9,650	8/9/16	10,730	mg/l
Bromide	6	U	4/5/16	U	4/5/16	U	mg/l
Cation-Anion Balance	27	1.30	10/4/16	-12.70	10/4/17	-3.86	%
Sum of Anions	27	271.00	12/9/14	224.00	8/9/16	240.65	meq/l
Sum of Cations	27	240.00	12/9/14	202.00	3/1/17	222.69	meq/l
Chemical Oxygen	6	167.00	12/9/14	44.00	4/5/16	79.33	mg/l
Chloride	27	1,330	12/9/14	658	9/27/16	784	mg/l
Conductivity, Lab	27	19,800	12/9/14	15,400	9/22/16	16,862	µmhos
Fluoride	27	35.20	11/7/17	26.80	9/8/15	32.47	mg/l
Hardness as CaCO3	27	30.00	9/22/16	U	1/3/17	10.87	mg/l
Nitrate as N, dissolved	6	U	4/5/16	U	4/5/16	U	mg/l
Nitrate/Nitrite as N,	6	0.02	12/9/14	0.02	12/9/14	0.02	mg/l
Nitrite as N, dissolved	6	0.03	12/9/14	0.03	12/9/14	0.03	mg/l
Nitrogen, Ammonia	6	4.04	9/22/16	3.30	12/9/14	3.66	mg/l
Nitrogen, Organic	6	3.50	4/5/16	0.80	7/11/17	2.38	mg/l
Nitrogen, Total Kjeldahl	6	6.90	10/4/16	4.70	7/11/17	6.02	mg/l
pH. lab	27	9.50	3/1/17	9.10	3/25/15	9.30	units
Phosphate, total	6	7.00	9/27/16	0.71	12/9/14	4.27	mg/l
Phosphorus, total	6	2.20	9/27/16	0.23	12/9/14	1.37	mg/l
SAR in Water	21	1,500	9/6/17	410.00	9/22/16	883	none
Sulfate	27	370	12/9/14	42.90	9/27/16	116	mg/l
Sulfide	6	3.00	7/11/17	0.30	4/5/16	1.10	mg/l
Total Dissolved Solids	27	14,100	12/9/14	12,000	12/29/15	12,565	mg/l
Conductivity, Field	24	19,560	12/16/15	15,380	4/5/16	17,070	µmhos
pH, Field	24	9.70	8/9/16	7.50	3/5/15	8.92	units
Temperature (°C), Field	24	16.70	9/6/17	10.20	3/1/17	12.75	(°C)
Water Level, Field	24	537.80	3/5/15	498.92	10/4/16	516.85	
Walei Levei, Fielu	24	007.00		490.92	10/4/10	510.65	Γι.
			0,0,10				
Parameters	No of					Average	Units
Parameters Metals	No. of	High	Date	Low	Date	Average	Units
Metals	Samples	High	Date	Low	Date	-	
Metals Aluminum, dissolved	Samples 6	High U	Date 10/4/16	Low U	Date 10/4/16	U	mg/l
Metals Aluminum, dissolved Arsenic, dissolved	Samples 6 6	High U 0.01	Date 10/4/16 12/9/14	Low U U	Date 10/4/16 12/9/14	U 0.01	mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	Samples 6 6 6	High U 0.01 0.46	Date 10/4/16 12/9/14 10/4/16	Low U U 0.05	Date 10/4/16 12/9/14 4/5/16	U 0.01 0.31	mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	Samples 6 6 6 6	High U 0.01 0.46 U	Date 10/4/16 12/9/14 10/4/16 10/4/16	Low U U 0.05 U	Date 10/4/16 12/9/14 4/5/16 10/4/16	U 0.01 0.31 U	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	Samples 6 6 6 6 26	High U 0.01 0.46 U 7.80	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16	Low U U 0.05 U 6.20	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17	U 0.01 0.31 U 7.32	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	Samples 6 6 6 6 26 6	High U 0.01 0.46 U 7.80 U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16	Low U U 0.05 U 6.20 U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16	U 0.01 0.31 U 7.32 U	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	Samples 6 6 6 6 6 6 6 26 26	High U 0.01 0.46 U 7.80 U 7.00	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 9/22/16	Low U U 0.05 U 6.20 U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15	U 0.01 0.31 U 7.32 U 2.29	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	Samples 6 6 6 6 6 6 26 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 9/22/16 10/4/16	Low U U 0.05 U 6.20 U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16	U 0.01 0.31 U 7.32 U 2.29 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	Samples 6 6 6 6 6 26 6 26 6 26 6 6	High U 0.01 0.46 U 7.80 U 7.00 U U U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 9/22/16 10/4/16 10/4/16	Low U U 0.05 U 6.20 U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16 10/4/16	U 0.01 0.31 U 7.32 U 2.29 U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	Samples 6 6 6 6 6 26 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.01 0.46 U 7.80 U 7.00 U 7.00 U U 0.60	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 9/22/16 10/4/16 10/4/16 10/4/16 10/4/16	Low U U 0.05 U 6.20 U U U U U 0.20	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	Samples 6 6 6 6 26 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	High U 0.01 0.46 U 7.80 U 7.00 U 7.00 U U 0.60 U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16	Low U U 0.05 U 6.20 U U U U U U 0.20 U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16 4/5/16	U 0.01 0.31 U 7.32 U 2.29 U U U U 0.38 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	Samples 6 6 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 0.60 U 2.17	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14	Low U U 0.05 U 6.20 U U U U 0.20 U 1.94	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16 4/5/16 9/27/16	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	Samples 6 6 6 6 26 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 0.60 U 2.17 4.00	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15	Low U U 0.05 U 6.20 U U U U 0.20 U 1.94 U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16 4/5/16 9/27/16 9/8/15	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05 2.83	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	Samples 6 6 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 7.00 U 0.60 U 2.17 4.00 U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16	Low U U 0.05 U 6.20 U U U U 0.20 U 1.94 U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 9/22/16 4/5/16 9/27/16 9/27/16 9/8/15 10/4/16	U 0.01 0.31 U 7.32 U 2.29 U U 0.38 U 0.38 U 2.05 2.83 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Beryllium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	Samples 6 6 6 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 7.00 U 0.60 U 2.17 4.00 U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16	Low U U 0.05 U 6.20 U U U U 0.20 U 1.94 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 9/22/16 4/5/16 9/27/16 9/27/16 9/8/15 10/4/16 10/4/16	U 0.01 0.31 U 7.32 U 2.29 U U 0.38 U 0.38 U 2.05 2.83 U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved	Samples 6 6 6 26 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 0.60 U 2.17 4.00 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16	Low U U 0.05 U 6.20 U U U U 0.20 U 1.94 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 9/22/16 4/5/16 9/27/16 9/27/16 9/27/16 9/8/15 10/4/16 10/4/16 10/4/16	U 0.01 0.31 U 7.32 U 2.29 U U U U 0.38 U 2.05 2.83 U U U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	Samples 6 6 6 26 6 26 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 0.60 U 2.17 4.00 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16 10/4/16	Low U U 0.05 U 6.20 U U U U U 0.20 U 1.94 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 9/22/16 4/5/16 9/27/16 9/27/16 9/27/16 10/4/16 10/4/16 10/4/16 10/4/16	U 0.01 0.31 U 7.32 U 2.29 U U 0.38 U 2.05 2.83 U U U U U U U U U U U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved	Samples 6 6 6 26 6 26 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 0.60 U 2.17 4.00 U U U U U U U U 113.00	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16	Low U U 0.05 U 6.20 U U U U U 0.20 U 1.94 U U U U U U 0.20 0.20 U 0.20 0	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16 9/27/16 9/8/15 10/4/16 10/4/16 10/4/16 10/4/16 9/27/16	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05 2.83 U U U U U U U 83.23	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	Samples 6 6 6 26 6 26 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U U 0.60 U 2.17 4.00 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16	Low U U 0.05 U 6.20 U U U U U 0.20 U 1.94 U U U U U U U 0.20 0.20 0	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16 9/27/16 9/8/15 10/4/16 10/4/16 10/4/16 10/4/16 9/27/16 9/27/16 9/27/16	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05 2.83 U U U U U U 83.23 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 6 6 6 6 26 6 26 6	High U 0.01 0.46 U 7.80 U 7.00 U 0.60 U 2.17 4.00 U U U U U U U 113.00 U 34.00	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/16 10/4/17 10/4/16 10/4/16 10/4/17 10/17 10/17 10/17 10/17 10/10	Low U U 0.05 U 6.20 U U U U U 0.20 U 1.94 U U U U U 0.20 U 1.94 U U 0.20 U 1.94 U 0 0 0 0 0 0 0 0 0 0 0 0 0	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16 4/5/16 9/27/16 9/8/15 10/4/16 10/2/16 10/2/16 10/2/16 10/2/16 10/2/16 10/2/16 10/2/16	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05 2.83 U U U U U 83.23 U 24.27	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 6 6 6 26 6 26 6 26 26 6 26 6 26 26 26 26	High U 0.01 0.46 U 7.80 U 7.00 U U 0.60 U 2.17 4.00 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 9/22/16 7/11/17 12/9/14	Low U U 0.05 U 6.20 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16 9/22/16 4/5/16 9/27/16 9/8/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/17 10/4/17 10/4/17 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/2/16 1/27/16 1/27/16 1/27/16 1/27/16 1/27/16	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05 2.83 U U U U U U 83.23 U 24.27 5,005	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Magnese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Strontium, dissolved	Samples 6 6 6 26 6 26 6 26 6 26 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 26 6 26 26 26 26 26 26 26 26 26 26 26	High U 0.01 0.46 U 7.80 U 7.00 U 0.60 U 2.17 4.00 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 9/22/16 7/11/17 12/9/14 8/8/17	Low U U 0.05 U 6.20 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16 10/4/16 9/22/16 4/5/16 9/27/16 9/8/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 3/27/16 3/1/17 12/29/15	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05 2.83 U U U 0 83.23 U 24.27 5,005 0.15	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 6 6 6 26 6 26 6 26 26 6 26 6 26 26 26 26	High U 0.01 0.46 U 7.80 U 7.00 U U 0.60 U 2.17 4.00 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 4/5/16 12/9/14 3/25/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 12/9/14 9/22/16 7/11/17 12/9/14	Low U U 0.05 U 6.20 U U U U U U U U U U U U U	Date 10/4/16 12/9/14 4/5/16 10/4/16 10/4/17 10/4/16 3/25/15 10/4/16 9/22/16 4/5/16 9/27/16 9/8/15 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/17 10/4/17 10/4/17 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/4/16 10/4/16 10/4/17 10/4/16 10/2/16 1/27/16 1/27/16 1/27/16 1/27/16 1/27/16	U 0.01 0.31 U 7.32 U 2.29 U U U 0.38 U 2.05 2.83 U U U U U U 83.23 U 24.27 5,005	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 35: DS-6 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 101 1773



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry		підп	Dale	LOW	Dale	Average	Units
	Samples	04.000	40/4/47	47.400	40/00/44	04.005	
Bicarbonate as CaCO3	34	31,600	12/4/17	17,400	12/30/14	24,035	mg/l
Carbonate as CaCO3	34	16,600	8/2/16	608	8/8/17	8,806	mg/l
Total Alkalinity as	34	41,300	7/7/16	23,300	10/10/17	32,841	mg/l
Bromide	4	U	4/5/16	U	4/5/16	U	mg/l
Cation-Anion Balance	34	6.50	6/17/15	-15.10	12/16/15	-3.39	%
Sum of Anions	34	3,360.00	12/17/14	728.00	10/10/17	1,818.12	meq/l
Sum of Cations	34	3,230.00	12/17/14	665.00	9/11/17	1,721.79	meq/l
Chemical Oxygen	5	3,630.00	11/5/15	836.00	7/11/17	2,211.20	mg/l
Chloride	34	96,000	12/30/14	9,250	10/10/17	41,334	mg/l
Conductivity, Lab	34	207,000	12/17/14	50,800	5/10/17	103,688	µmhos
Fluoride	34	90.90	6/12/17	40.40	10/11/16	63.16	mg/l
Hardness as CaCO3	34	82.40	12/16/15	U	12/30/14	48.73	mg/l
Nitrate as N, dissolved	5	U	4/5/16	Ŭ	4/5/16	U	mg/l
Nitrate/Nitrite as N,	5	Ŭ	4/5/16	Ŭ	4/5/16	Ŭ	mg/l
Nitrite as N, dissolved	5	Ŭ	4/5/16	Ŭ	4/5/16	Ŭ	mg/l
Nitrogen, Ammonia	5	40.40	12/17/14	6.66	7/11/17	22.49	mg/l
Nitrogen, Organic	5	4.00	12/30/14	4.00	12/30/14	4.00	mg/l
Nitrogen, Total Kjeldahl	5	33.00	12/30/14	1.10	11/5/15	13.22	mg/l
pH, lab	34	9.10	5/6/15	8.50	10/11/16	8.77	units
Phosphate, total	5	71.00	11/5/15	20.00	7/11/17	52.40	
	5	23.00	11/5/15		7/11/17		mg/l
Phosphorus, total				6.50		16.92	mg/l
SAR in Water	18	7,600	6/8/16	1,800.00	10/11/16	3,280	none
Sulfate	34	480	12/30/14	110.00	7/11/17	350	mg/l
Sulfide	5	4.20	11/5/15	1.30	12/17/14	2.34	mg/l
Total Dissolved Solids	34	189,676	12/17/14	39,000	10/10/17	100,533	mg/l
Conductivity, Field	33	186,700	12/17/14	47,760	10/10/17	107,631	µmhos
pH, Field	33	9.20	3/10/16	7.10	12/17/14	8.34	units
Temperature (°C), Field	33	16.00	9/9/15	9.00	12/4/17	13.40	(°C)
Water Level, Field	34	643.10	12/12/14	478.76	11/9/16	545.92	Ft.
		010.10	12/12/11				
			•				
Parameters	No. of	High	Date	Low	Date	Average	Units
Parameters Metals			•			Average	Units
	No. of		•			Average	Units mg/l
Metals Aluminum, dissolved	No. of Samples 5	High	Date 4/5/16	Low	Date		mg/l
Metals Aluminum, dissolved Arsenic, dissolved	No. of Samples 5 5	High U U	Date 4/5/16 4/5/16	Low U U	Date 4/5/16 4/5/16	U U U	mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	No. of Samples 5 5 5 5	High U	Date 4/5/16 4/5/16 7/11/17	Low U	Date 4/5/16 4/5/16 11/5/15	U U 0.84	mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	No. of Samples 5 5 5 5 5 5	High U U 1.90 U	Date 4/5/16 4/5/16 7/11/17 4/5/16	Low U U 0.40 U	Date 4/5/16 4/5/16 11/5/15 4/5/16	U U 0.84 U	mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	No. of Samples 5 5 5 5 5 34	High U U 1.90 U 66.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15	Low U U 0.40 U 13.50	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17	U U 0.84 U 34.12	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	No. of Samples 5 5 5 5 5 34 5	High U U 1.90 U 66.00 U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16	Low U U 0.40 U 13.50 U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16	U U 0.84 U 34.12 U	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	No. of Samples 5 5 5 5 34 5 34 5 34	High U U 1.90 U 66.00 U 30.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15	Low U U 0.40 U 13.50 U U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14	U U 0.84 U 34.12 U 13.43	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	No. of Samples 5 5 5 5 34 5 34 5 34 5	High U U 1.90 U 66.00 U 30.00 U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16	Low U U 0.40 U 13.50 U U U U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16	U U 0.84 U 34.12 U 13.43 U	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	No. of Samples 5 5 5 5 34 5 34 5 34 5 5 5	High U U 1.90 U 66.00 U 30.00 U U U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 4/5/16	Low U U 0.40 U 13.50 U U U U U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 4/5/16	U U 0.84 U 34.12 U 13.43 U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	No. of Samples 5 5 5 5 34 5 34 5 34 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U U 5.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 4/5/16 12/30/14	Low U U 0.40 U 13.50 U U U U U 3.00	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 4/5/16 12/17/14	U U 0.84 U 34.12 U 13.43 U U U 4.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	No. of Samples 5 5 5 5 34 5 34 5 34 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U U 5.00 U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 4/5/16 12/30/14 4/5/16	Low U U 0.40 U 13.50 U U U U U 3.00 U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16	U U 0.84 U 34.12 U 13.43 U U U 4.00 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	No. of Samples 5 5 5 5 34 5 34 5 34 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U U 5.00 U 2.70	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 12/30/14 4/5/16 7/11/17	Low U U 0.40 U 13.50 U U U U U 3.00 U 1.00	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/17/14 4/5/16 12/30/14	U U 0.84 U 34.12 U 13.43 U U U 4.00 U U 1.60	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	No. of Samples 5 5 5 5 34 5 34 5 5 5 5 5 5 5 34	High U U 1.90 U 66.00 U 30.00 U 30.00 U U 5.00 U 2.70 20.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15	Low U U 0.40 U 13.50 U U U U U U 3.00 U 1.00 U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15	U U 0.84 U 34.12 U 13.43 U 13.43 U U 4.00 U 1.60 20.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	No. of Samples 5 5 5 5 34 5 34 5 5 5 5 5 5 5 34 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U U 5.00 U 2.70 20.00 U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16	Low U U 0.40 U 13.50 U U U U 0 U 1.00 U U U U U U U U U U U U U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16	U U 0.84 U 34.12 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U 5.00 U 2.70 20.00 U U U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16 4/5/16	Low U U 0.40 U 13.50 U U U U 0 U 1.00 U U U U U U U U U U U U U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16	U U 0.84 U 34.12 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved	No. of Samples 5 5 5 5 34 5 34 5 5 5 5 5 5 34 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U U 5.00 U 2.70 20.00 U U 2.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16	Low U U 0.40 U 13.50 U U U U 0 U 1.00 U U U U 2.00	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U 2.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 34 5 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U U 5.00 U 2.70 20.00 U U 2.00 U U 2.00 U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 5/6/15 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16	Low U U 0.40 U 13.50 U U U U 0 U 1.00 U U U U 2.00 U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U 2.00 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 34 5 5 5 34 5 5 5 5 34 5 5 34 5 5 34 5 5 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U U 5.00 U 2.70 20.00 U U 2.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 12/30/14 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 9/9/15	Low U U 0.40 U 13.50 U U U U U 0 U 1.00 U U U U 2.00 U 23.00	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 9/11/17	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U 2.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 34 5 5 5 5 5 5 5 5 34 5 5 5 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U U 5.00 U 2.70 20.00 U 2.70 20.00 U 140.00 U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16	Low U U 0.40 U 13.50 U U U U U 0 U 1.00 U U U U 2.00 U U 23.00 U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 9/11/17 4/5/16	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U 2.00 U 0 67.18 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 34 5 5 5 34 5 5 5 5 34 5 5 34 5 5 34 5 5 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U 2.70 20.00 U 2.70 20.00 U U 2.00 U 140.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 12/30/14 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 9/9/15	Low U U 0.40 U 13.50 U U U U U 0 U 1.00 U U U 2.00 U 23.00	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 9/11/17	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U 2.00 U 0 67.18	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 34 5 5 5 5 5 5 5 5 34 5 5 5 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U U 5.00 U 2.70 20.00 U 2.70 20.00 U 140.00 U	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16	Low U U 0.40 U 13.50 U U U U U 0 U 1.00 U U U U 2.00 U U 23.00 U	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 9/11/17 4/5/16	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U 2.00 U 0 67.18 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Sodium, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 5 5 5 5 5 5 34 5 5 34 5 5 34 5 5 34 5 5 34 5 34 5 5 34 5 5 34 34 5 5 34 5 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U 2.70 20.00 U 2.70 20.00 U 2.70 20.00 U 140.00 U 30.00 73,200	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 12/30/14 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 12/30/14 4/5/16 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/14 12/30/15 12/30/15 12/30/15 12/30/14 12/30/14 13/30/14 13/30/14 13/30/14 13/30/14 13/30/14 13/30/14 13/30/14 13/30/14 13/30/16 12/30/14 13/30/15 13/30/15 13/30/14 13/30/15 13/30/15 13/30/14 13/30/15 13/30/14 13/30/15 13/30/14 13/30/14 13/30/15 13/30/14 13/30/14 13/30/15 13/30/15 13/30/14 13/30/15 13/30/15 13/30/15 13/30/15 13/30/15 13/30/15 13/30/17/15 12/17/14	Low U U 0.40 U 13.50 U U U U U 0 U 1.00 U U U 2.00 U 23.00 U 16.00	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 9/11/17 4/5/16 9/11/17 9/11/17	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U 13.43 U 13.43 U 13.43 U 13.43 U 13.43 U 20.00 U 0 U 2.00 U 0 U 2.00 U 2.00 U 2.00 U 2.3.03 39,068	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	No. of Samples 5 5 5 34 5 34 5 5 5 5 5 5 5 5 5 5 5 5 5	High U U 1.90 U 66.00 U 30.00 U 30.00 U 2.70 20.00 U 2.70 20.00 U 2.70 20.00 U 140.00 U 30.00	Date 4/5/16 4/5/16 7/11/17 4/5/16 9/9/15 4/5/16 4/5/16 12/30/14 4/5/16 7/11/17 6/17/15 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 4/5/16 6/17/15	Low U U 0.40 U 13.50 U U U U U 0 U 1.00 U U 2.00 U 23.00 U 16.00 15,100	Date 4/5/16 4/5/16 11/5/15 4/5/16 9/11/17 4/5/16 12/30/14 4/5/16 12/17/14 4/5/16 12/30/14 6/17/15 4/5/16 12/30/14 6/17/15 4/5/16 4/5/16 4/5/16 9/11/17 4/5/16 9/11/17	U U 0.84 U 34.12 U 13.43 U 13.43 U 13.43 U U 4.00 U 1.60 20.00 U U 2.00 U U 67.18 U 23.03	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 36: DS-7 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 201 BE THE THE OW NY 77 310159



Parameters	No. of	High	Date	Low	Date	Average	Units
Wet Chemistry	Samples	riigii	Date	LOW	Dale	Average	Units
Bicarbonate as CaCO3	_	23,300	1/15/2015	17,900	9/28/2017	20,340	mg/l
	5 5						
Carbonate as CaCO3		7,880	4/5/2016	4,200	1/15/2015	6,180	mg/l
Total Alkalinity as	5	27,500	1/15/2015	25,300	9/28/2017	26,520	mg/l
Bromide	5	<u> </u>	4/5/2016	U	4/5/2016	U	mg/l
Cation-Anion Balance	5	-2.40	9/28/2017	-9.50	1/8/2015	-5.00	%
Sum of Anions	5	582.00	1/15/2015	542.00	9/28/2017	563.20	meq/l
Sum of Cations	5	526.00	4/5/2016	477.00	1/8/2015	509.80	meq/l
Chemical Oxygen	5	731.00	1/15/2015	95.00	9/28/2017	252.40	mg/l
Chloride	5	1,050	12/15/2015	900	1/15/2015	963	mg/l
Conductivity, Lab	5	36,000	1/15/2015	33,200	12/15/2015	34,680	µmhos
Fluoride	5	66.80	1/15/2015	63.00	1/8/2015	65.48	mg/l
Hardness as CaCO3	5	U	4/5/2016	U	4/5/2016	U	mg/l
Nitrate as N, dissolved	5	0.03	1/15/2015	0.00	1/8/2015	0.02	mg/l
Nitrate/Nitrite as N,	5	0.03	1/15/2015	0.00	1/8/2015	0.02	mg/l
Nitrite as N, dissolved	5	U	1/8/2015	U	1/8/2015	U	mg/l
Nitrogen, Ammonia	5	10.50	1/15/2015	6.87	9/28/2017	8.39	mg/l
Nitrogen, Organic	5	6.60	4/5/2016	4.00	1/8/2015	5.46	mg/l
Nitrogen, Total Kjeldahl	5	14.80	1/15/2015	13.00	9/28/2017	13.82	mg/l
pH, lab	5	9.20	4/5/2016	8.70	1/8/2015	8.98	units
Phosphate, total	5	21.00	9/28/2017	15.00	12/15/2015	17.80	mg/l
Phosphorus, total	5	6.60	9/28/2017	4.90	12/15/2015	5.74	mg/l
SAR in Water	0	N/A	N/A	N/A	N/A	N/A	none
Sulfate	5	162	9/28/2017	100.00	1/8/2015	131	mg/l
Sulfide	5	0.80	12/15/2015	0.60	4/5/2016	0.70	mg/l
Total Dissolved Solids	5	29,400	1/15/2015	28,400	9/28/2017	28,860	mg/l
Conductivity, Field	4	39,750	12/15/2015	31,210	4/5/2016	34,750	µmhos
pH, Field	4	9.07	4/5/2016		10/6/2014	8.68	
Temperature (°C), Field	4	<u>9.07</u> 14.35	9/28/2017	8.20 11.20	10/6/2014	13.14	units (°C)
Water Level, Field	4	496.60	9/28/2017	81.00	1/8/2015	392.23	Ft.
Daramatara	No. of	Lliah	Date	Low	Date	Average	Units
Parameters		High	Date	Low	Date	Average	Units
Metals	Samples		4/5/0040		4/5/0040		
Aluminum, dissolved	5	U	4/5/2016	U	4/5/2016	U	mg/l
Arsenic, dissolved	5	0.07	1/15/2015	U	4/5/2016	0.03	mg/l
Barium, dissolved	5	1.00	1/15/2015	0.43	1/8/2015	0.71	mal
							mg/l
Beryllium, dissolved	5	U	4/5/2016	U	4/5/2016	U	mg/l
Boron, dissolved	5	U 13.30	4/5/2016 9/28/2017	12.70	4/5/2016 4/5/2016	U 13.00	mg/l mg/l
Boron, dissolved Cadmium, dissolved	5 5	U	4/5/2016		4/5/2016	U	mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved	5 5 5	U 13.30 U U	4/5/2016 9/28/2017 4/5/2016 4/5/2016	12.70 U U	4/5/2016 4/5/2016 4/5/2016 4/5/2016	U 13.00 U U	mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	5 5 5 5	U 13.30 U U U U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016	12.70 U U U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016	U 13.00 U U U	mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	5 5 5 5 5 5	U 13.30 U U U U U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 4/5/2016	12.70 U U U U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016	U 13.00 U U U U U	mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	5 5 5 5 5 5 5 5	U 13.30 U U U U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015	12.70 U U U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017	U 13.00 U U U	mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	5 5 5 5 5 5	U 13.30 U U U U U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 4/5/2016	12.70 U U U U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016	U 13.00 U U U U U	mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	5 5 5 5 5 5 5 5	U 13.30 U U U U 2.70	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015	12.70 U U U U 0.40	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017	U 13.00 U U U U 1.76	mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	5 5 5 5 5 5 5 5 5	U 13.30 U U U U 2.70 U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2016 1/15/2015 4/5/2016 4/5/2016	12.70 U U U U 0.40 U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016	U 13.00 U U U 1.76 U	mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 4.70	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016	12.70 U U U U 0.40 U 4.20	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016	U 13.00 U U U 1.76 U 4.42	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 4.70 U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016	12.70 U U U 0.40 U 4.20 U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016	U 13.00 U U U 1.76 U 4.42 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 2.70 U 4.70 U U U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016	12.70 U U U U 0.40 U 4.20 U U U U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 4/5/2016	U 13.00 U U U U 1.76 U 4.42 U U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 4.70 U U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015	12.70 U U U U 0.40 U 4.20 U U U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 4/5/2016 1/15/2015	U 13.00 U U U 1.76 U 4.42 U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 2.70 U 4.70 U U U U U 0.50 U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015 1/15/2015	12.70 U U U U U 4.20 U U U U U U 0.50 U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 1/15/2015 1/15/2015	U 13.00 U U U U 1.76 U 4.42 U U U U U U U U U U U U U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 2.70 U 4.70 U U U U 0.50 U 68.00	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015 1/15/2015 4/5/2016	12.70 U U U U 0.40 U 4.20 U U U 0.50 U 43.00	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 1/15/2015 1/15/2015 1/8/2015	U 13.00 U U U U 1.76 U 1.76 U 4.42 U U U U 0.50 U 57.60	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 4.70 U U U U 0.50 U 68.00 U	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2016 1/15/2015 1/15/2015 4/5/2016 4/5/2016	12.70 U U U U 0.40 U 4.20 U U U U U U U U U 43.00 U	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 1/15/2015 1/15/2015 1/8/2015 4/5/2016	U 13.00 U U U U 1.76 U 4.42 U U U U U U U U 57.60 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 4.70 U 4.70 U U 0.50 U 0.50 U 68.00 U 30.00	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2016 1/15/2015 1/15/2015 4/5/2016 4/5/2016 9/28/2017	12.70 U U U U 0.40 U 4.20 U U U U 0.50 U 43.00 U 18.00	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 1/15/2015 1/15/2015 1/8/2015 4/5/2016 1/8/2015	U 13.00 U U U U 1.76 U 1.76 U 4.42 U U U U 0.50 U 57.60 U 22.40	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved Solium, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 2.70 U 4.70 U U 0.50 U 0.50 U 68.00 U 30.00 11,900	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2015 1/15/2015 4/5/2016 4/5/2016 9/28/2017 4/5/2016	12.70 U U U U 0.40 U 4.20 U U U U 0.50 U 43.00 U 18.00 10,800	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 1/15/2015 1/15/2015 1/8/2015 1/8/2015 1/8/2015	U 13.00 U U U 1.76 U 1.76 U 4.42 U U U 0.50 U 57.60 U 22.40 11,540	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	U 13.30 U U U 2.70 U 4.70 U 4.70 U U 0.50 U 0.50 U 68.00 U 30.00	4/5/2016 9/28/2017 4/5/2016 4/5/2016 4/5/2016 1/15/2015 4/5/2016 4/5/2016 4/5/2016 4/5/2016 1/15/2016 1/15/2015 1/15/2015 4/5/2016 4/5/2016 9/28/2017	12.70 U U U U 0.40 U 4.20 U U U U 0.50 U 43.00 U 18.00	4/5/2016 4/5/2016 4/5/2016 4/5/2016 4/5/2016 9/28/2017 4/5/2016 1/8/2015 4/5/2016 4/5/2016 1/15/2015 1/15/2015 1/8/2015 4/5/2016 1/8/2015	U 13.00 U U U U 1.76 U 1.76 U 4.42 U U U U 0.50 U 57.60 U 22.40	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 37: DS-8 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 201 We The Martin NY 77 91009



Baramotors	No. of	High	Date	Low	Date	Avorago	Units
Parameters Wet Chemistry		пign	Date	LOW	Date	Average	Units
	Samples	13,300	44/4/2044	10.000	10/15/0015	10 500	
Bicarbonate as CaCO3	6		11/4/2014	12,300	12/15/2015	12,583	mg/l
Carbonate as CaCO3	6	2,810	11/4/2014	1,880	9/28/2017	2,552	mg/l
Total Alkalinity as	6	16,100	11/4/2014	14,300	9/28/2017	15,150	mg/l
Bromide	6	U	4/5/2016	<u> </u>	4/5/2016	U	mg/l
Cation-Anion Balance	6	-1.90	9/28/2017	-13.50	2/4/2015	-5.35	%
Sum of Anions	6	438.00	2/4/2015	343.00	9/28/2017	380.33	meq/l
Sum of Cations	6	358.00	11/4/2014	330.00	9/28/2017	340.67	meq/l
Chemical Oxygen	6	132.00	9/28/2017	97.00	4/5/2016	120.33	mg/l
Chloride	6	2,470	2/4/2015	1,940	9/28/2017	2,100	mg/l
Conductivity, Lab	6	26,900	2/4/2015	24,300	12/15/2015	25,750	µmhos
Fluoride	6	47.40	4/5/2016	42.70	12/15/2015	45.25	mg/l
Hardness as CaCO3	6	36.00	1/28/2015	U	12/15/2015	23.50	mg/l
Nitrate as N, dissolved	6	0.03	1/28/2015	0.03	1/28/2015	0.03	mg/l
Nitrate/Nitrite as N,	6	0.04	1/28/2015	0.04	1/28/2015	0.04	mg/l
Nitrite as N, dissolved	6	0.01	1/28/2015	0.01	1/28/2015	0.01	mg/l
Nitrogen, Ammonia	6	7.40	1/28/2015	4.05	12/15/2015	5.62	mg/l
Nitrogen, Organic	6	4.50	12/15/2015	1.80	1/28/2015	3.36	mg/l
Nitrogen, Total Kjeldahl	6	9.70	11/4/2014	7.00	2/4/2015	8.45	mg/l
pH, lab	6	8.90	12/15/2015	8.80	11/4/2014	8.85	units
Phosphate, total	6	7.80	11/4/2014	3.70	2/4/2015	5.43	mg/l
Phosphorus, total	6	2.51	11/4/2014	1.20	2/4/2015	1.75	mg/l
SAR in Water	5	660	2/4/2015	550.00	1/28/2015	617	none
Sulfate	6	2,870	2/4/2015	31.70	9/28/2017	775	mg/l
Sulfide	6	<u>2,870</u> U	4/5/2016	U U	4/5/2016	U 175	
				-			mg/l
Total Dissolved Solids	6	22,300	2/4/2015	18,300	9/28/2017	19,900	mg/l
Conductivity, Field	4	29,050	12/15/2015	23,740	4/5/2016	25,738	µmhos
pH, Field	4	8.33	4/5/2016	7.20	1/29/2015	8.03	units
Temperature (°C), Field	4	13.50	4/5/2016	12.44	12/15/2015	13.14	(°C)
Water Level, Field	5	470.10	10/29/2014	453.70	9/28/2017	459.48	Ft.
					D (•	
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples						4
A.L	-				1/5/2016	U	mg/l
Aluminum, dissolved	6	U	4/5/2016	U	4/5/2016	-	
Arsenic, dissolved	6 6	0.01	11/4/2014	U	2/4/2015	0.01	mg/l
Arsenic, dissolved Barium, dissolved	6 6 6	0.01 1.87	11/4/2014 11/4/2014	U 0.12	2/4/2015 2/4/2015	0.01 0.51	mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved	6 6 6 6	0.01 1.87 U	11/4/2014 11/4/2014 4/5/2016	U 0.12 U	2/4/2015 2/4/2015 4/5/2016	0.01 0.51 U	mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	6 6 6 6	0.01 1.87 U 10.00	11/4/2014 11/4/2014 4/5/2016 11/4/2014	U 0.12	2/4/2015 2/4/2015 4/5/2016 9/28/2017	0.01 0.51 U 9.20	mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved	6 6 6 6	0.01 1.87 U	11/4/2014 11/4/2014 4/5/2016	U 0.12 U	2/4/2015 2/4/2015 4/5/2016	0.01 0.51 U	mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	6 6 6 6	0.01 1.87 U 10.00	11/4/2014 11/4/2014 4/5/2016 11/4/2014	U 0.12 U 8.70	2/4/2015 2/4/2015 4/5/2016 9/28/2017	0.01 0.51 U 9.20	mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	6 6 6 6 6	0.01 1.87 U 10.00 U	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016	U 0.12 U 8.70 U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016	0.01 0.51 U 9.20 U	mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016	U 0.12 U 8.70 U U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015	0.01 0.51 U 9.20 U 3.67	mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U U	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 4/5/2016	U 0.12 U 8.70 U U U U U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 4/5/2016	0.01 0.51 U 9.20 U 3.67 U U	mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U U 1.20	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 4/5/2016 11/4/2014	U 0.12 U 8.70 U U U U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 4/5/2016 12/15/2015	0.01 0.51 U 9.20 U 3.67 U	mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U 1.20 U	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016	U 0.12 U 8.70 U U U U U 0.20 U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2015 4/5/2016	0.01 0.51 U 9.20 U 3.67 U U 0.58 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U 1.20 U 3.20	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014	U 0.12 U 8.70 U U U U U 0.20 U 2.68	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2015 4/5/2016 9/28/2017	0.01 0.51 U 9.20 U 3.67 U 0.58 U 2.93	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U 1.20 U 3.20 7.00	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015	U 0.12 U 8.70 U U U U 0.20 U 2.68 U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 12/15/2015 4/5/2016 9/28/2017 11/4/2014	0.01 0.51 U 9.20 U 3.67 U 0.58 U 2.93 5.33	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U 1.20 U 3.20 7.00 U	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016	U 0.12 U 8.70 U U U U U U 2.68 U U U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016	0.01 0.51 U 9.20 U 3.67 U 0.58 U 2.93 5.33 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U 1.20 U 3.20 7.00 U U U	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 4/5/2016	U 0.12 U 8.70 U U U U U 0.20 U 2.68 U U U U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 4/5/2016	0.01 0.51 U 9.20 U 3.67 U 0.58 U 2.93 5.33 U U U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U 1.20 U 1.20 U 3.20 7.00 U U 0.30	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 4/5/2016 2/4/2015	U 0.12 U 8.70 U U U 0.20 U 2.68 U U U U U 0.20	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 4/5/2016 12/15/2015	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25	mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U U 1.20 U 3.20 7.00 U U 0.30 U	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 2/4/2015 4/5/2016	U 0.12 U 8.70 U U U U 0.20 U 2.68 U U U U U U 0.20 U U U U U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 4/5/2016 12/15/2015 4/5/2016	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Potassium, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U 1.20 U 1.20 U 3.20 7.00 U U 0.30 U 24.00	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 2/4/2015 4/5/2016 1/28/2015	U 0.12 U 8.70 U U U 0.20 U U 2.68 U U U U 0.20 U 22.00	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 12/15/2016 12/15/2015 4/5/2016 12/15/2015	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25 U 22.83	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U 1.20 U 1.20 U 3.20 7.00 U U 0.30 U 24.00 U	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 2/4/2015 4/5/2016 1/28/2015 4/5/2016	U 0.12 U 8.70 U U U 0.20 U 2.68 U U U 0.20 U U 22.00 U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 12/15/2016 12/15/2015 4/5/2016	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25 U 22.83 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Selenium, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U 1.20 U 1.20 U 3.20 7.00 U U 0.30 U 24.00 U 22.00	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 2/4/2015 4/5/2016 1/28/2015 4/5/2016 9/28/2017	U 0.12 U 8.70 U U U U 2.68 U U U 2.68 U U U 22.00 U 22.00 U 16.00	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 12/15/2016 12/15/2015 4/5/2016 12/15/2015 4/5/2016 2/4/2015	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25 U 22.83 U 18.83	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U 1.20 U 1.20 U 3.20 7.00 U U 0.30 U 24.00 U 22.00 8,090	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 2/4/2015 4/5/2016 1/28/2015 4/5/2016 1/28/2015 4/5/2016 9/28/2017 11/4/2014	U 0.12 U 8.70 U U U 0.20 U 2.68 U U 2.68 U U U 22.00 U 22.00 U 16.00 7,490	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 12/15/2016 12/15/2015 4/5/2016 12/15/2015 4/5/2016 2/4/2015 9/28/2017	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25 U 22.83 U 18.83 7,712	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved Sodium, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U 1.20 U 1.20 U 3.20 7.00 U U 0.30 U 24.00 U 22.00 8,090 0.30	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 2/4/2015 4/5/2016 1/28/2015 4/5/2016 1/28/2015 4/5/2016 9/28/2017 11/4/2014	U 0.12 U 8.70 U U U U 2.68 U U 2.68 U U U 22.00 U 22.00 U 16.00 7,490 U	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2015 4/5/2016 9/28/2017 11/4/2014 4/5/2016 12/15/2016 12/15/2015 4/5/2016 12/15/2015 4/5/2016 2/4/2015 9/28/2017 9/28/2017	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25 U 22.83 U 18.83 7,712 0.14	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lead, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0.01 1.87 U 10.00 U 6.00 U 1.20 U 1.20 U 3.20 7.00 U U 0.30 U 24.00 U 22.00 8,090	11/4/2014 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 4/5/2016 11/4/2014 1/28/2015 4/5/2016 2/4/2015 4/5/2016 1/28/2015 4/5/2016 1/28/2015 4/5/2016 9/28/2017 11/4/2014	U 0.12 U 8.70 U U U 0.20 U 2.68 U U 2.68 U U U 22.00 U 22.00 U 16.00 7,490	2/4/2015 2/4/2015 4/5/2016 9/28/2017 4/5/2016 2/4/2015 4/5/2016 12/15/2016 9/28/2017 11/4/2014 4/5/2016 12/15/2016 12/15/2015 4/5/2016 12/15/2015 4/5/2016 2/4/2015 9/28/2017	0.01 0.51 U 9.20 U 3.67 U U 0.58 U 2.93 5.33 U U 0.25 U 22.83 U 18.83 7,712	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 38: DS-9 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 2013 ANTON WEDDING



Daramotore	No. of	High	Data		Date	Average	Units
Parameters Wet Chemistry		High	Date	Low	Date	Average	Units
	Samples	00.000	0/45/40	20.4	0/40/04	7 740	
Bicarbonate as CaCO3	59	23,200	9/15/10	294	9/16/91	7,713	mg/l
Carbonate as CaCO3	59	4,730	11/2/15	10.00	6/30/95	1,084	mg/l
Total Alkalinity as	59	24,800	11/2/15	294	9/16/91	8,688	mg/l
Bromide	28	33.00	8/30/90	0.10	5/21/07	7.54	mg/l
Cation-Anion Balance	59	6.00	9/27/17	-26.00	11/2/15	-1.66	%
Sum of Anions	56	511.00	9/15/10	30.69	3/25/92	207.06	meq/l
Sum of Cations	56	403.00	9/15/10	31.56	5/28/91	193.63	meq/l
Chemical Oxygen	25	960.00	6/14/08	37.00	9/27/17	163.36	mg/l
Chloride	58	684.00	3/22/17	21.00	8/30/90	325.67	mg/l
Conductivity, Lab	57	30,500	9/15/10	2,500	6/16/92	12,553	µmhos
Fluoride	59	46.20	3/22/17	1.30	5/28/91	26.12	mg/l
Hardness as CaCO3	59	135.00	6/14/08	6.00	8/30/90	25.65	mg/l
Nitrate as N, dissolved	28	3.22	10/22/13	0.02	5/24/05	0.51	mg/l
Nitrate/Nitrite as N,	28	4.14	10/22/13	0.02	9/27/17	0.61	mg/l
Nitrite as N, dissolved	28	0.92	10/22/13	0.00	5/21/07	0.15	mg/l
Nitrogen, Ammonia	28	7.90	11/6/14	1.17	9/15/92	4.06	mg/l
Nitrogen, Organic	28	46.00	6/14/08	0.50	8/22/90	7.59	mg/l
Nitrogen, Total Kjeldahl	28	51.00	6/14/08	1.90	8/22/90	11.66	mg/l
pH, lab	59	9.20	6/16/92	8.30	6/30/95	8.66	units
Phosphate, total	26	155.00	5/21/07	0.17	9/15/92	16.47	mg/l
Phosphorus, total	29	4.70	9/15/10	0.05	9/15/92	1.60	mg/l
SAR in Water	56	1,020.00	5/21/07	88.89	3/25/92	390.18	none
Sulfate	58	2,031.00	9/16/91	2.50	6/18/96	169.18	mg/l
Sulfide	28	3.31	8/30/90	0.00	7/31/91	0.57	mg/l
Total Dissolved Solids	58	24,500	9/15/10	1,708	9/15/92	9,970	mg/l
	75	29,680	3/22/17	1,800	6/1/91	12,399	
Conductivity, Field	75		9/1/90		11/7/15		umhos
pH, Field Temperature (°C), Field	39	<u>12.20</u> 19.40		7.86 7.50	12/1/90	8.95 12.42	units (°C)
			8/1/90				
Water Level, Field	52	422.70	3/22/16	405.03	4/1/01	409.53	Ft.
Deremetere	No of	Lliah	Data		Data	Average	Unite
Parameters	No. of	High	Date	Low	Date	Average	Units
Metals	Samples	-				•	
Metals Aluminum, dissolved	Samples 28	1.40	9/15/10	U	6/23/94	0.61	mg/l
Metals Aluminum, dissolved Arsenic, dissolved	Samples 28 28	1.40 0.01	9/15/10 8/22/90	U U	6/23/94 9/15/92	0.61 0.00	mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved	Samples 28 28 28 28	1.40 0.01 6.65	9/15/10 8/22/90 9/15/10	U U 0.08	6/23/94 9/15/92 9/15/92	0.61 0.00 3.83	mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved	Samples 28 28 28 28 28 28 28	1.40 0.01 6.65 U	9/15/10 8/22/90 9/15/10 3/22/16	U U 0.08 U	6/23/94 9/15/92 9/15/92 3/22/16	0.61 0.00 3.83 U	mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	Samples 28 28 28 28 28 59	1.40 0.01 6.65 U 7.70	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17	U U 0.08 U 0.03	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91	0.61 0.00 3.83 U 2.84	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved	Samples 28 28 28 28 28 28 28 28 28 28 28 28 28 28	1.40 0.01 6.65 U 7.70 U	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16	U U 0.08 U 0.03 U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16	0.61 0.00 3.83 U 2.84 U	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved	Samples 28 28 28 28 28 28 28 59 28 59 28 59	1.40 0.01 6.65 U 7.70 U 44.00	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08	U U 0.08 U 0.03	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91	0.61 0.00 3.83 U 2.84 U 3.52	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	Samples 28 28 28 28 28 59 28 59 28 59 28 29	1.40 0.01 6.65 U 7.70 U 44.00 0.20	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15	U U 0.08 U 0.03 U 1.00 U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94	0.61 0.00 3.83 U 2.84 U 3.52 0.11	mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved	Samples 28 28 28 28 28 59 28 59 28 29 28 29 28 28 29 28 28 29 28 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09	U U 0.08 U 0.03 U 1.00	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 7/29/09	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10	mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved	Samples 28 28 28 28 28 59 28 59 28 59 28 29	1.40 0.01 6.65 U 7.70 U 44.00 0.20	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15	U U 0.08 U 0.03 U 1.00 U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94	0.61 0.00 3.83 U 2.84 U 3.52 0.11	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved	Samples 28 28 28 28 28 59 28 59 28 29 28 29 28 28 29 28 28 29 28 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09	U U 0.08 U 0.03 U 1.00 U U U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 7/29/09	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10	mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved	Samples 28 28 28 28 28 59 28 59 28 29 28 29 28 28 28 28 28 28 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91	U U 0.08 U 0.03 U 1.00 U U U 0.04	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 7/29/09 6/23/94	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved	Samples 28 28 28 28 59 28 59 28 29 28 29 28 28 28 28 28 28 28 28 28 28 28 28 28 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10	U 0.08 U 0.03 U 1.00 U U U 0.04 U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 6/23/94 9/15/92	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved	Samples 28 28 28 28 28 59 28 59 28 29 28 29 28 28 28 28 28 28 28 28 28 28 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.32	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 6/23/94	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved	Samples 28 28 28 28 59 28 59 28 28 28 29 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.32 1.00	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 7/29/09 6/23/94 9/15/92 6/16/92 6/23/94	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved	Samples 28 28 28 28 59 28 59 28 28 28 59 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.32 1.00 U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 7/29/09 6/23/94 9/15/92 6/16/92 6/23/94 3/22/16	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved	Samples 28 28 28 59 28 59 28 29 28 29 28 29 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U 0.10	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16 6/23/94	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.32 1.00 U U U U U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 9/15/92 6/23/94 9/15/92 6/23/94 3/22/16 6/23/94	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U 0.10	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved	Samples 28 28 28 59 28 59 28 28 28 29 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U 0.10 0.02	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16 6/23/94	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.04 U 0.32 1.00 U U U U U	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 9/15/92 6/23/94 3/22/16 6/23/94 6/23/94	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U 0.10 0.02	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Potassium, dissolved	Samples 28 28 28 59 28 59 28 29 28 29 28 29	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U 0.10 0.20	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16 6/23/94 6/23/94 6/23/94	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.04 U 0.32 1.00 U U U U U U 3.00	6/23/94 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 6/23/94 9/15/92 6/16/92 6/23/94 3/22/16 6/23/94 6/23/94 8/30/90	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U 0.10 0.02 8.95	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved	Samples 28 28 28 59 28 59 28 29 28 59 28	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U 0.10 0.20	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16 6/23/94 6/23/94 6/23/94	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.04 U 0.32 1.00 U U U U U U 3.00 0.001	6/23/94 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 6/23/94 9/15/92 6/16/92 6/23/94 3/22/16 6/23/94 6/23/94 8/30/90 8/30/90	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U 0.10 0.02 8.95 0.002	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 28 28 28 59 28 59 28 29 28 59 28 59	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U 0.10 0.20 0.002 26.00 0.002 34.00	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16 6/23/94 6/23/94 6/23/94 6/30/09 7/31/91 11/20/01	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.04 U 0.04 U U U U U U U U 3.00 0.001 1.50	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 6/23/94 6/23/94 3/22/16 6/23/94 3/22/16 6/23/94 8/30/90 8/30/90 2/26/91	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U 0.10 0.02 8.95 0.002 17.25	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Molybdenum, dissolved Nickel, dissolved Selenium, dissolved Solium, dissolved	Samples 28 28 28 59 28 59 28 29 28 29 28 59 28 59 28 59 59 59 59	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U 0.10 0.20 0.002 34.00 9,130	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16 6/23/94 6/23/94 6/23/94 6/30/09 7/31/91 11/20/01 9/15/10	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.32 1.00 U U U U U 0.32 1.00 0.04 U 0.32 1.00 0 0.03 1.00 0 0.03 0 0 0 0 0 0 0 0 0 0 0 0 0	6/23/94 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 6/23/94 6/23/94 6/23/94 3/22/16 6/23/94 3/22/16 6/23/94 8/30/90 8/30/90 2/26/91 5/28/91	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U 0.10 0.02 8.95 0.002 17.25 3.947	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l
Metals Aluminum, dissolved Arsenic, dissolved Barium, dissolved Beryllium, dissolved Boron, dissolved Cadmium, dissolved Cadmium, dissolved Calcium, dissolved Chromium, dissolved Copper, dissolved Iron, dissolved Lead, dissolved Lithium, dissolved Magnesium, dissolved Manganese, dissolved Mercury, dissolved Nickel, dissolved Selenium, dissolved Silica, dissolved	Samples 28 28 28 59 28 59 28 29 28 59 28 59	1.40 0.01 6.65 U 7.70 U 44.00 0.20 0.10 1.82 0.04 3.20 10.00 0.07 U 0.10 0.20 0.002 26.00 0.002 34.00	9/15/10 8/22/90 9/15/10 3/22/16 9/27/17 3/22/16 6/14/08 11/2/15 7/29/09 7/31/91 7/31/91 9/15/10 12/30/96 5/26/99 3/22/16 6/23/94 6/23/94 6/23/94 6/30/09 7/31/91 11/20/01	U U 0.08 U 0.03 U 1.00 U U 0.04 U 0.04 U 0.04 U U U U U U U U 3.00 0.001 1.50	6/23/94 9/15/92 9/15/92 3/22/16 2/26/91 3/22/16 5/28/91 6/23/94 6/23/94 6/23/94 6/23/94 3/22/16 6/23/94 3/22/16 6/23/94 8/30/90 8/30/90 2/26/91	0.61 0.00 3.83 U 2.84 U 3.52 0.11 0.10 0.30 0.03 2.00 4.61 0.04 U 0.10 0.02 8.95 0.002 17.25	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l

Table 39: IRI-7 Annual Dissolution Surface Aquifer

DAUB & ASSOCIATES, INC. 20 Martin 1000000000



For Remote Wells (all levels taken from top of casing)							
Well / Ground Level (ft)	Depth to Water Level ft.						
	2012	2013	2014	2015	2016	2017	
IRI-8 / 6573.6	316.20	314.05	314.60	317.70	318.08	317.80	
IRI-9 / 6666.3	568.32	468.35	470.10	469.95	469.68	469.50	
IRI-10 / 6440.7	133.95	130.30	134.40	134.58	135.54	P&A	
IRI-11 / 6613.6	463.25	464.11	465.00	527.44	466.95	466.90	
*MWU-2 / 6441.0	187.10	188.32	191.75	194.36	195.00	195.40	
*MWA-2 / 6441.0	190.00	191.86	196.20	199.05	199.80	199.60	
*MWB-2 / 6441.0	246.55	248.13	251.80	253.28	253.05	254.80	
*MWD-1 / 6467.0	326.35	326.75	327.55	328.59	328.83	329.30	
*MWD-2 / 6641.0	249.50	250.12	251.65	252.58	247.82	253.50	
TH75-6A	283.40	286.10	287.25	293.18	298.16	298.10	
TH75-6B	285.15	286.62	287.19	291.46	294.82	295.50	
TH75-11A	408.40	408.58	413.30	415.76	414.94	413.70	
TH75-11B	495.10	495.75	496.95	500.17	497.28	494.80	
EX-2 (WL collected quarterly)	481.49	482.66	486.23	481.56	471.75	472.80	

Table 40: Summary of 2017 Annual Remote Water Levels



2017 Project Status Report & Annual Plan of Development

Appendix B: Subsidence Monitoring

DAUB & ASSOCIATES, INC.

January 2018

QUARTERLY 3M-TDR READING FOR DECEMBER 1, 2017

Prepared for

NATURAL SODA, INC.

December 2017

Prepared by



AGAPITO ASSOCIATES, INC. 715 Horizon Drive, Suite 340 Grand Junction, CO 81506

1726 Cole Blvd., Bldg. 22, Suite 130 Golden, CO 80401 **DISCLAIMER:** This report contains professional opinions based on the survey logged with the TDR 100 instrument. AAI makes no warranties, either expressed or implied, as to the accuracy or completeness of the information herein. Opinions are based on subjective interpretations of the survey data; other equally valid interpretations may exist. Identification and control of hazardous conditions are the responsibilities of the Owner.

1.0 INTRODUCTION

Natural Soda, Inc. (Natural Soda) commissioned Agapito Associates, Inc. (AAI) to take quarterly logs of its time domain reflectometry (TDR) surveys for monitoring subsidence from monitoring well (SMW) 3M TDR. This report presents the TDR surveys logged on December 1, 2017, for Cables #2 (Kyle) and #3 (Matt) from SMW 3M TDR. The completion diagram of SMW 3M TDR is shown in Figure 1 for reference.

2.0 TDR READINGS

The surveys were taken with AAI's Campbell Scientific, Inc. TDR 100 instrument. A propagation velocity factor (v_p) of 0.87 was used in the data processing and 2,048 data points were recorded along each cable. A waveform average of 64 points was used to eliminate background noise. Cables #1 (Blank) and #4 (Kyle2) were corrupted during installation and are not used for monitoring. No readings were taken in these cables.

3.0 WAVEFORM ANALYSIS AND RESULTS

TDR waveform histories for Cables #2 and #3 are shown in Figures 2 and 3, starting with the original waveforms from December 10, 2003. Expanded waveforms are shown in Figures 4 and 5 for Cables #2 and #3, respectively. The close-up figures highlight the zone of interest between 880 and 1,960 ft deep, including the B Groove aquifer located between 1,566 and 1,588 ft.

The December 1, 2017, survey indicates that no significant ground movement has occurred around SWM 3M TDR since the cables were originally installed. This is evidenced by the constant waveform history in Cable #3 (Figure 3).

Cable #2, parallel to Cable #3, shows evidence of water infiltration into the cable starting soon after installation. This is evident in the February 17, 2004, waveform, which shows the first signs of a distorted signal beyond a depth of approximately 1,745 ft. Water causes distortion by changing the dielectric constant of the insulation material in the cable and, thus, the propagation velocity of the reflected signal. Subsequent surveys in Cable #2 show a gradual rise in the distortion elevation, symptomatic of water propagating up the cable under hydraulic pressure from a leak originating at or near the end of the cable. Similar to the most recent results, the December 1, 2017, survey indicates that water has infiltrated the cable up to a depth of about 1,438 ft.

If the cable is not mechanically deformed by ground movement, the signal distortion caused by water infiltration superimposes on the original waveform. This appears to be the process occurring in Cable #2. Cable deformation, including shearing or breakage, normally produces a sharp "spike" in the waveform, which is expected to be recognizable even through the distortion caused by water infiltration. Cable #2 shows no obvious signs of localized damage, suggesting that significant ground movement is not occurring. This is consistent with the results of Cable #3. Water infiltration is likely to continue in Cable #2 and may eventually render the cable inoperative.





Comparison of Waveforms (December 10, 2003; February 17, 2004; March 15, June 6, September 1, and December 1, 2017) **for 3M-TDR Cable #2** (Kyle) Figure 2.



Comparison of Waveforms (December 10, 2003; February 17, 2004; March 15, June 6, September 1, and December 1, 2017) **for 3M-TDR Cable #3** (Matt) Figure 3.





Comparison of Close-Up Waveforms (December 10, 2003; February 17, 2004; March 15, June 6, September 1, and December 1, 2017) for 3M-TDR Cable #2 (Kyle) Figure 4.




Agapito Associates, Inc. Consulting Engineers and Geologists

CLIENT: Natural Soda, Inc.





Agapito Associates, Inc. Consulting Engineers and Geologists

CLIENT: Natural Soda, Inc.

TDR BOREHOLE No. 4A 5M (Cable A)





2017 Project Status Report & Annual Plan of Development

Appendix C: Potentiometric Surface Maps (Confidential)

DAUB & ASSOCIATES, INC. 2034 A CONCERNING MARK

January 2018



CONFIDENTIAL

Legend



Contour Interval: 5 feet



Natural Soda LLC Average 2017 Potentiometric Surface A-Groove Aquifer T1S, R98W Rio Blanco County, CO

Daub & Associates, Inc.

Date: October 5, 2017



CONFIDENTIAL

Legend



Contour Interval: 5 feet



Natural Soda LLC Average 2017 Potentiometric Surface B-Groove Aquifer T1S, R98W Rio Blanco County, CO

Daub & Associates, Inc.

Date: October 5, 2017



2017 Project Status Report & Annual Plan of Development

Appendix D: 2016 Vegetation Monitoring Reclamation Status Report

Prepared by Rusty Roberts.

DAUB & ASSOCIATES, INC. State Contraction of the State of the State

January 2018

Reclamation Status Report 2017 Vegetation Monitoring Results for Reclaimed Well Pads

Evaluating Status of Current Plant Communities on Reclaimed Well Pads in meeting Criteria for Successful Reclamation

> Prepared for: Natural Soda LLC Rifle, Colorado

Prepared by: Rusty Roberts Meeker, Colorado

January 2018

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Introduction

The Bureau of Land Management (BLM) and the State of Colorado require reclaimed lands to be revegetated in a manner that establishes a diverse, effective, and long-lasting vegetation cover that is equal or nearly so to the natural vegetation of the surrounding areas. Natural Soda's approved mine plan requires periodic monitoring to evaluate the success of revegetation efforts.

Vegetation cover, species composition, species density and ground cover data were collected from undisturbed reference area sites on Natural Soda's lease area near their current mining operations. The data collected from undisturbed areas is used in comparison to the vegetation cover, species composition, species density and ground cover data collected from reclaimed well pad sites to determine if the site have met the criteria for successful reclamation.

Data was collected from six well pad sites that have been plugged and abandoned and are in final reclamation status and from four undisturbed reference area sites near the six well pads. Table 1 lists the well pads in final reclamation status for which data was collected in 2017.

Criteria for Successful Reclamation of Disturbed Areas

BLM approved Natural Soda's plant expansion in August 2015. The approval for the expansion modified the criterion for successful reclamation of disturbances from what had been utilized in prior years. The new criteria for successful reclamation must reflect a plant community of at least five desirable plant species where no one species may exceed 70 percent relative cover and desired foliar cover, bare ground, and shrub and/or forb density must have 80 percent similarity in relation to the identified desired plant community.

The desired plant community referenced in the criteria refers to an ecological site present at or near the area of disturbance. Two ecological sites occur on the parts of the lease area being actively mined, a pinyon and juniper woodland site and a rolling loam rangeland site. Several of the sites were along the fringe of the pinyon and juniper community and had soils of both a woodland site and a rangeland site. The vegetative values in the criteria are based on the capability of a site in an early seral plant community, which is basically an herbaceous species dominated site with varying amounts of shrub species. The rolling loam rangeland site reflects more of the capability of a site in an early seral plant community, thus, data collected from the four rolling loam rangeland reference areas were used to evaluate the success of the plant community on each reclaimed pad in achieving the reclamation criteria.

The scientific and common names of the plant species encountered within the sampling from undisturbed sites and from each well pad site are presented in tables in the appendix.

Vegetation Sampling Methods Utilized to Measure Criteria for Successful Reclamation

Data was collected based upon recommendations in White River Field Office's Surface Reclamation Plan which require that vegetation cover, composition, and diversity data be gathered using quantitative methods to measure the six Core Terrestrial Indicators and Methods in BLM Technical Note 440. BLM approved sampling methods are found in Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, Volume I and II: Quick Start.

The six core terrestrial indicators include:

- (1) <u>Bare Ground</u>: The amount of bare ground is accepted as one of the most sensitive indicators of resource condition in rangelands. A large percentage of bare ground can be an indicator of high erosion potential, low forage production, poor wildlife habitat, and increased risk of invasion by nonnative plant species.
- (2) <u>Vegetation Composition</u>: Vegetation composition data, including the cover of groups of species are indicators generated from the same data, and when used together, are sensitive to most changes and are useful when determining the status of key species in a plant community.
- (3) <u>Nonnative Invasive Plant Species</u>: The presence and cover of nonnative species is acquired as a component of vegetation composition. Nonnative invasive species have the ability to significantly alter sustainability and site resilience.
- (4) <u>Plant Species of Management Concern</u>: The presence and cover of plant species of management concern is also acquired as a component of vegetation composition. Plant species of management concern can be sensitive to site disturbance, provide important ecosystem functions, or contribute to biological diversity.
- (5) <u>Vegetation Height</u>: The vertical structure of vegetation which can be used to characterize wildlife habitat and estimate wind erosion potential.
- (6) <u>Proportion of Soil Surface in Large Intercanopy Gaps</u>: Canopy gap intercept measures the proportion of a line covered by large gaps between plant canopies and is an important indicator of the potential for erosion.

Line-point intercept with plot-level species inventory was the vegetation monitoring technique used to measure the core indicators of bare ground, vegetation composition, non-native invasive plant species and plant species of management concern.

Line-point intercept is a rapid, accurate method for quantifying soil cover, including vegetation, litter, rocks and biological crusts. The theory behind this method is that if an infinite number of points are placed in a two-dimensional area, the cover of a plant species can be determined by counting the number of points that hit that species. These measurements are related to wind and water erosion, water infiltration, and the ability of the site to resist and recover from disturbance.

Gap intercept measurements were made along the line-point intercept transect line to provide information about the proportion of the line covered by large gaps between plants. Large gaps between plant canopies are important indicators of increased susceptibility to water erosion and runoff, wind erosion, weed invasion, and wildlife habitat. A plot-level plant species inventory provides a rapid estimate of species richness. A 50 square meter area search area at each site was utilized to record all plant species occurring within the plot. A thorough search of the plot can detect less-frequently occurring species that may not have been recorded in line-point intercept cover measurements.

Shrub and forb density also a criteria for successful reclamation are not measured by the sampling methods used for the other criteria. Forb and shrub density measurements were taken from one-meter square density quadrants along the same line-point intercept transect line used for the other sampling techniques.

Summary of Results for Reclaimed Well Pads in Achieving Reclamation Goals

Vegetation cover, plant species composition, ground cover and shrub and forb density data were collected from four rolling loam reference areas and from six well pad sites that have been plugged and abandoned and are in final reclamation status. Data was collected from July 26 thru August 1, 2017. Table 1 lists the well pads in final reclamation status for which data was collected in 2017. The location of sites monitored are illustrated on the attached location map.

None of the reclamation efforts on the 6 well pads examined are a failure. The vegetation communities that have established on these reclaimed well pads are mostly the perennial species planted during reclamation. Many of the perennial species especially the grasses, are well established providing a plant community resilient to drought periods. The plant communities on all 6 are providing adequate soil protection and have stabilized each site.

Table 1 is a summary of the progress of each site monitored in achieving successful reclamation. The site specific monitoring results for each site are discussed in detail later.

	Table 1 - Summa	ary of Results for Re	eclaimed Well Pa	ads in Achieving	Successful Rec	lamation Criter	ia					
		Criteria for Su	ccessful Reclam	nation of Disturb	oed Areas							
	at least five desirable plantdesired foliar cover, bare ground, and shrub and/or forbspecies where no one species maydensity must have 80 percent similarity in relation to theexceed 70 percent relative covervalues measured on nearby undisturbed native rangelands											
Well	the number of desired plant speciesthe relative cover of the desired species with the greatest cover% similarity of desired foliar cover% similarity of bare ground% similarity of shrub density% similarity of shrub density											
Pad #	2017 Data Collected from Well Pads in Final Reclamation Status											
1-3A	19 species	7.3 %	62 %	36 %	39 %	82 %	no					
4A-1V	16 species	10.7 %	46 %	49 %	11 %	110 %	no					
5H-1V	21 species	24.0 %	91 %	67 %	36 %	50 %	no					
91-2H	20 species	13.3 %	86 %	85 %	86 %	50 %	yes					
93-2M	20 species	20.0 %	63 %	67 %	47 %	14 %	no					
93-4H	17 species	8.7 %	42 %	54 %	18 %	65 %	no					
	2017 Baseline Data Collected from Undisturbed Native Rangeland Reference Areas											
	30 species	24 %	67 %	17.0 %	2.2	5.65						
Note: val	lues in red are belo	ow the criteria require	ed for successful	reclamation								

Vegetation Sampling Methods and Procedures for Reclaimed Pads and Reference Areas

The line-point intercept with plot-level species inventory was the vegetation sampling protocol used on both the reclaimed pads and associated reference areas. The procedure involves random placement of a transect line (measuring tape) as the base for data collection. Values for foliar cover, basal cover, species composition and bare ground were measured at specific points along the line. Gaps in vegetation canopy were measured along the same tape line. Density quadrants were placed adjacent the line at specific points.

A 50 meter tape was used for the baseline transect for each of the four rolling loam reference areas. A 25 meter tape was used for the baseline for all transects placed on the reclaimed pads. Three transects were placed on each reclaimed pad.

The following techniques were used to collect the sample data:

- The beginning and ending points of each transect were recorded using a GPS receiver. Azimuths from the 0-meter to the 50-meter point were recorded.
- Photographs were taken at each transect that show vegetation features at the time of sampling.
- Point count data were collected at 1-meter intervals along a 50-meter tape or at 0.5-meter intervals along a 25-meter tape using a thin, straight metal rod (pin flag) for a total of fifty samples taken along each transect.
 - The first plant species in the canopy hit by the drop of a pin flag at each sample point was recorded by species in the "Top Layer". The total of top layer hits were used to determine total foliar cover for the study site and the total foliar cover for each species hit in the top layer.
 - Subsequent plant species and vegetative litter hits were recorded in the "Lower Canopy Layers". Vegetative litter was recorded as either unattached herbaceous or woody litter.
 - Species composition based upon total of all plant species encountered in the top layer and the lower layers at reach sample point and recorded by species and summarized by plant group.
 - Soil surface hits were recorded as plant species basal intercepts, lichen crust, moss, embedded litter, duff or bare soil. Bare ground percent was determined by a bare soil hit with no canopy intercepts in the top and lower canopy layers.
- Canopy gaps were recorded directly below the transect tape line. Only perennial plant species were used in the vegetative canopy. Annual species if present were not included as part of the gap. Gaps larger than 20 centimeters were recorded for the length of each transect. Gaps were totaled into gap sizes (21 to 50; 51 to 100; 101 to 200; >200). Though the gap data is not used in evaluating reclamation criteria, it was collected as a visualization of perennial species cover.
- Forb and shrub density data were taken from one-meter square density quadrants alongside the same line-point intercept transect line used for the other sampling techniques. Quadrants were placed at every 5th sample point along the transect tape for a total of 10 one-meter density quads for each transect. Only forb and shrub densities are required in the criteria for successful reclamation. The total number of forb and shrub

species rooted in each quad were counted and recorded by species and summarized by plant group. Densities for grasses or trees were not collected.

• A plot-level plant species inventory was conducted within approximately 50 square meter search area at each site. In addition to those plant species recorded during sampling, other species not encountered during sampling but were observed in the sample area were recorded for species richness.

Vegetation Sampling Results for Undisturbed Native Rangeland Reference Areas

Vegetation cover, species composition, species density and ground cover data were collected from four rolling loam rangeland sites on July 27 and August 1, 2017. Transects were established in the four rolling loam sites which represent the site characteristic's common in the project area. The pre-disturbance vegetation of the reclaimed well pads examined had pinyon and juniper tree cover over all or portion of the site. Several of the sites were along the fringe of the pinyon and juniper community and had soils of both a woodland site and a rangeland site. The vegetative values in the criteria are based on the capability of a site in an early seral plant community, which is basically an herbaceous species dominated site with varying amounts of shrub species. The rolling loam rangeland site reflects more of the capability of a site in an early seral plant community, thus, data collected from the four rolling loam rangeland reference areas were used to evaluate the success of the plant community on each reclaimed pad in achieving the reclamation criteria.

Values for foliar cover, basal cover, species composition and bare ground were collected from four 50 meter transects for a total of 200 sample points. Values for forb and shrub densities were collected from 40 one-meter square quadrants. The data collected from the four reference areas are summarized in Table 2.

	Table 2 - Rolling Loam Reference Areas Vegetation Cover, Species Composition, Species Density & Ground Cover											
		Line-Point Canopy Intercept Data ¹ Den										
Plant	Group	Number of Species						on Forb/Shrub Density (#/m ²)				
Perennial Grass	ses	6	43.5		8.0	(55.6	Not c	ollected			
Invasive Non-N	Vative Grasses	1	1.5	0.0		2.3		Not collected				
Desirable Forb S	pecies	17	1.5		0.5		5.3		5.65			
Invasive and N	on-Native Forbs	2	0.0		0.0		0.0		0.33			
Shrubs		7	22.0	22.0		26.8			2.2			
Vegetation To	tals	33	68.5		9.0	1(0.0		8.18			
Line-Point Intercept Soil Surface Cover Data ³												
Percent	Bare Ground	Biotic Crust	Herbaceou Litter	us	Wood	ly Litter	D	Duff	Rock			
Cover Type	17.0	3.5	53.0		11 . 1.0	3.5		0.0	0.0			

¹ Sum of data from 4 randomly placed 50 meter transects with 50 sample points collected from each transect. Foliar cover based upon 1st plant species encountered in the canopy at each sample point. Species composition based upon total of all plant species encountered at each sample point.

 2 Sum of density data collected from 10 one meter square quadrants along each transect. Only forb and shrub densities were recorded based upon reclamation criteria.

³ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.

The specific vegetation sampling data collected from the four rolling loam rangeland sites are presented in Appendix A. Data in the appendix include (1) vegetation cover, ground cover, species composition, and forb and shrub densities; (2) listing of plant species encountered; (3) GPS coordinate data for the transect start and end points; (4) inter-canopy gaps and (5) photographs of each transect.

Monitoring Results and Evaluation of Criteria for Well Pads in Final Reclamation Status

Vegetation cover, species composition, species density and ground cover data were collected from 6 reclaimed disturbed sites from July 26 thru August 1, 2017. The disturbed sites included 6 well pads in final reclamation status: 1-3A, 4A-1V, 5H-1V, 91-2H, 93-2M, and 93-4H. Well pad locations are noted on the attached location map.

In the data collected in 2016 well pads 4A-1V, 91-2H and 93-4H were combined as one site. Upon examining these sites in 2017, differences in the plant communities on these sites were observed, especially the difference in the cover of shrub species. Thus, each site was treated as separate sites for data collection to better evaluate the plant community established on each.

Vegetation sampling data collected for the 6 reclaimed well pads are presented in the Appendix B through Appendix G.

- Appendix B vegetation sampling data for reclaimed well pad 1-3A.
- Appendix C vegetation sampling data for reclaimed well pad 4A-1V.
- Appendix D vegetation sampling data for reclaimed well pad 5H-1V.
- Appendix E vegetation sampling data for reclaimed well pad 91-2H.
- Appendix F vegetation sampling data for reclaimed well pad 93-2M.
- Appendix G vegetation sampling data for reclaimed well pad 93-4H.

Vegetation sampling data in the appendixes include (1) vegetation cover, ground cover, species composition, and forb and shrub densities; (2) listing of plant species encountered; (3) GPS coordinate data for the transect start and end points; (4) inter-canopy gaps; (5) photographs of each transect and (6) plot diagram of transect layouts.

Well Pad 1-3A

This site was within the 4th growing season since being reclaimed when data was collected on July 26, 2017. Three 25 meter transects were placed in a spoke pattern on the pad with 50 sample points on each transect for a total of 150 points for cover data. Ten one meter square density quadrants were placed along each transect for a total of 30 quadrants. Data collected from this site include vegetative foliar and basal cover, species composition, forb and shrub densities and ground cover all summarized by plant group. In addition, ground cover data was collected for dead vegetative litter, bare ground and surface rock. Table 3 compares the data collected in 2016 and in 2017 for this site.

The 2017 data in the Table 3 is summarized from data collected in 2017 which is presented in Appendix Table B1. Each plant species encountered at this site is listed in Table B1. As shown in Table B1 there is a good representation of the seeded species established on the site.

	Vag	ototion	Corror			claimed F			aund Ca			
	veg		Cover,			sition, Spo ant Cano			-	ver	Density	Data ²
			Numl Spe			Foliar over		asal ver	Spe Comp		Forb/S Density	
Plant G	Froup		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Perennial Grasse	s		9	8	35.3	29.3	6.0	4.0	46.4	56.1	n/a	n/a
Invasive Non-Na	tive Grass	es	1	1	5.3	3.3	0.0	0.0	7.9	6.1	n/a	n/a
Desirable Forb S	pecies		4	7	27.3	8.0	3.3	1.3	32.5	19.5	1.67	4.63
Invasive and Nor	n-Native F	orbs	4	4	14.0	4.7	0.0	0.0	19.2	8.5	0.51	3.69
Shrubs			2	4	2.0	4.0	0.0	0.0	2.0	9.8	0.20	0.86
Vegetation Tota	ls		20	24	78.6	49.3	9.3	5.3	100.0	100.0	2.38	9.18
			Line	-Point Iı	itercept	Soil Surf	ace Cove	r Data ³				
Percent Bare Ground Biotic Crust Herbaceous Duff Rock												
Cover by 2016 20			2010	5 201	7 20	16 201	7 2016	2017	2016	2017	2016	2017
Туре	19.3	26.7	0.	0 0	0.0 44	.7 44.	0 0.0	0.0	0.0	0.0	0.7	0.0
¹ Sum of data from 3 randomly placed 25 meter transects with 50 sample points collected from each transect. Foliar cover based upon 1 st plant species encountered in the canopy at each sample point. Species composition based upon total of all												

plant species encountered at each sample point.

 2 Sum of density data collected from ten 1-meter square quadrants along each transect. Only forb and shrub densities were recorded based upon reclamation criteria.

³ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.

This site was heavily grazed by cattle prior to the time sampling data was collected on July 26, 2017. The site is fenced to exclude livestock but some of the fence appeared to have been damaged by cattle allowing them access to the site. Most of the perennial grasses and forbs were heavily grazed. The climatic conditions in 2017 were unfavorable following the grazing event not providing sufficient soil moisture to allow any regrowth of the grazed species. It also appeared the presence of livestock has resulted in an increase in the amount invasive weedy species on the site.

Substantial changes in foliar cover and bare ground occurred in 2017 as a result of the grazing impacts to the site as compared to those values in 2016. Foliar cover declined 37 percent in 2017. The amount of unprotected bare ground increased 28 percent. A six fold increase in the densities invasive and non-native forb species occurred in 2017. Canopy gaps measured along the transect tapes are an indicator of the cover of perennial species. Canopy gaps between perennial species increased 35 percent. One positive change was that desirable forb densities nearly doubled.

Table 4 is a comparison of the data collected for reclaimed well pad 1-3A with that of the rolling loam rangeland reference areas. Only the data required to access the success of achieving successful reclamation is used in Table 4.

Table 4 – Compar	Table 4 – Comparison of Reclamation Criteria Elements with Undisturbed Reference Areas												
Site	# desired plant species	% desired foliar cover	% bare ground	shrub density (#/m ²)	forb density (#/m ²)								
Reclaimed Pad 1-3A	19 species	41.3	26.7	0.86	4.63								
Reference Area ¹	30 species	67.0	17.0	2.2	5.65								
¹ The average of four undisturbed native rangelands reference areas were used as the base for evaluating success of the reclamation criteria.													

Evaluation of successful reclamation of the disturbance on Pad 1-3A:

- There are 19 desirable plant species established on the site (8 perennial grasses, 7 desirable forbs, and 4 shrubs) meeting the required five plant species.
- Russian wildrye (*Psathyrostachys juncea*) was the desired species with the greatest relative cover at 7.3% meeting the requirement that no one species can exceed 70% relative cover.
- The foliar cover of desirable species on the site was 62% of that on the rolling loam rangeland reference areas not meeting the requirement of 80% similarity.
- The amount of unprotected bare ground on the site was 64% greater than on the rolling loam rangeland reference areas which equates to 36% similarity, not meeting the required 80% similarity.
- The density of forbs and shrubs on the site in comparison with the rolling loam rangeland reference areas was 82% and 39%, respectively. The criteria only require either forb density or shrub density meet the requirement of 80% similarity. The forb density has 82% similarity which meets this criteria.

The plant community established on this site is representative of the seed mix utilized, is capable of persisting without continued intervention and should allow plant community successional processes to progress. Increased vigilance to maintain the enclosure fence to protect the site from extensive livestock grazing use, should allow the plant community to meet the criteria established for successful reclamation of the disturbance at this site.

Well Pad 4A-1V

This site was within the 10th growing season since being reclaimed when data was collected on July 28, 2017. Three 25 meter transects were placed in a spoke pattern on the pad with 50 sample points on each transect for a total of 150 points for cover data. Ten one meter square density quadrants were placed along each transect for a total of 30 quadrants. Data collected from this site include vegetative foliar and basal cover, species composition, forb and shrub densities and ground cover all summarized by plant group. In addition, ground cover data was collected for dead vegetative litter, bare ground and surface rock.

Table 5 compares the data collected in 2016 and in 2017 for this site. In the data collected in 2016, well pads 4A-1V, 91-2H and 93-4H were combined as one site. Differences in the plant communities on these sites were observed in 2017 so data was collected from each and treated as a separate site.

The 2017 data in the Table 5 is summarized from data presented in Appendix Table C1. Each plant species encountered at this site is listed in Table C1. As shown in Table C1 there is a good representation of the seeded species established on the site.

	Table 5 - Reclaimed Pad 4A-1V Vegetation Cover, Species Composition, Species Density & Ground Cover												
		ciuiioi	<u>i covci,</u>	opecies					ept Data		ver	Density	Data ²
			Numl Spe			Foli Cove		% B Co		Spe Compo		Forb/S Density	
Plant G	Plant Group 2016 2017 2016 2017 2016 2017 2016 2017 2016 2017												2017
Perennial Grasse	s		10	7	31.	3	19.3	4.0	4.0	37.2	53.3	n/a	n/a
Invasive Non-Na	tive Grass	es	1	1	7.	3	0.0	0.0	0.0	7.9	0.0	n/a	n/a
Desirable Forb S	pecies		6	5	16.	7	10.7	2.0	2.0	25.5	31.7	1.89	6.23
Invasive and Nor	n-Native F	orbs	5	2	8.	7	4.7	0.0	0.0	10.9	13.3	0.57	1.97
Shrubs			4	4	8.	7	0.7	0.0	0.0	9.5	1.7	0.40	0.23
Vegetation Tota	ls		26	19	72.	7	35.3	6.0	6.0	100.0	100.0	2.86	8.43
			Line	-Point I	ntercep	ot So	il Surfa	ce Cover	r Data ³				
Percent Bare Ground Biotic Crust Herbaceous Duff Rock													
Cover by 2016 201 Type 167 201			2010	5 201	2	016	2017	2016	2017	2016	2017	2016	2017
19pc 16.7 34.7 0.0 0.0 46.7 31.3 3.3 4.0 0.0 0.0 2.7									2.7	8.0			
¹ Sum of data from 3 randomly placed 25 meter transects with 50 sample points collected from each transect. Foliar cover based upon 1 st plant species encountered in the canopy at each sample point. Species composition based upon total of all													

plant species encountered at each sample point.

² Sum of density data collected from ten 1-meter square quadrants along each transect. Only forb and shrub densities were recorded based upon reclamation criteria.

³ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.

This site was heavily grazed by cattle prior to the time sampling data was collected on July 28, 2017. The site is fenced to exclude livestock but several areas of the fence along the northeast side of the enclosure have been damaged by cattle allowing them access to the site. Most of the perennial grasses and forbs were heavily grazed. The climatic conditions in 2017 were unfavorable following the grazing event not providing sufficient soil moisture to allow any regrowth of the grazed species. It also appeared the presence of livestock has resulted in an increase in the amount invasive weedy species on the site.

Substantial changes in foliar cover and bare ground occurred in 2017 as a result of the grazing impacts to the site as compared to those values in 2016. Total vegetative canopy cover declined 55 percent in 2017. Canopy cover of perennial species declined 46 percent and gaps between canopies of perennial species increased 32 percent. The amount of unprotected bare ground increased 48 percent. A 250 percent increase in the densities invasive and non-native forb species occurred in 2017. One positive change was that desirable forb densities more than doubled.

Table 6 is a comparison of the data collected for reclaimed well pads 4A-1V with that from the rolling loam rangeland reference areas. Only the data required to access the success of achieving successful reclamation is used in Table 6.

Table 6 – Comp	Table 6 – Comparison of Reclamation Criteria Elements with Undisturbed Reference Areas												
Site	# desired plant species	% desired foliar cover	% bare ground	shrub density (#/m ²)	forb density (#/m ²)								
Reclaimed Pad 4A-1V	16 species	30.6	34.7	0.23	6.23								
Reference Area ¹	30 species	67.0	17.0	2.2	5.65								
¹ The average of four un success of the reclamatic		ngelands referen	ce areas were u	sed as the base for	evaluating								

Evaluation of successful reclamation of the disturbance on Well Pad sites 4A-1V:

- There are 16 desirable plant species established on the site (7 perennial grasses, 5 desirable forbs, and 4 shrubs) meeting the required five plant species.
- Russian wildrye (*Psathyrostachys juncea*) was the desired species with the greatest relative cover at 10.7% meeting the requirement that no one species can exceed 70% relative cover.
- The foliar cover of desirable species on the site was 46% of that on the rolling loam rangeland reference areas not meeting the requirement of 80% similarity.
- The amount of unprotected bare ground on the site was 51% greater than on the rolling loam rangeland reference areas which equates to 49% similarity, not meeting the required 80% similarity.
- The density of forbs and shrubs on the site in comparison with the rolling loam rangeland reference areas was 110% and 10%, respectively. The criteria only require either forb density or shrub density meet the requirement of 80% similarity. The forb density has 110% similarity which meets this criteria.

The plant community established on this site does not meet the criteria for successful reclamation. It is representative of the seed mix utilized, is capable of persisting without continued intervention and should allow plant community successional processes to progress. Increased vigilance to maintain the enclosure fence to protect the site from extensive livestock grazing use, should allow the plant community to meet the criteria established for successful reclamation of the disturbance at this site.

Well Pad 5H-1V

This well pad was within the 6th growing season since being reclaimed when data was collected on July 26, 2017. Three 25 meter transects were placed in a spoke pattern on the pad with 50 sample points on each transect for a total of 150 points for cover data. Ten one meter square density quadrants were placed along each transect for a total of 30 quadrants. Data collected from this site include vegetative foliar and basal cover, species composition, forb and shrub densities and ground cover all summarized by plant group. In addition, ground cover data was collected for dead vegetative litter, bare ground and surface rock. Table 7 compares the data collected in 2016 and in 2017 for this site.

Prior to 2017, this site was unfenced which resulted in heavy grazing of desirable species established on the site. The grazing impacts to the site resulted in poor representation of perennial forb and shrub species in data collection in previous years. The site has since been fenced protecting the site from livestock grazing. Desirable plant species are showing improved representation in the 2017 data.

The 2017 data in the Table 7 is summarized from data presented in Appendix Table D1. Each plant species encountered at this site is listed in Table D1. As shown in Table D1 there is a good establishment of the perennial grasses with uniform distribution across much of the site.

			Table 7	' - Refer	ence Ar	ea for Re	laimed	Pad 5H-1	V				
Vegetation Cover, Species Composition, Species Density & Ground Cover													
					Line-Pe	oint Cano	py Inter	ept Data	1		Density	Data ²	
			Numl Spe			Foliar over		Basal over	Spe Comp		Forb/S Density		
Plant C	Froup		2016	2017	2016	2017	2016	a2017	2016	2017	2016	2017	
Perennial Grasse	S		8	8	38.7	55.3	8.7	10.7	73.5	85.0	n/a	n/a	
Invasive Non-Na	ative Grass	es	1	1	5.3	2.6	0.0	0.0	9.6	4.7	n/a	n/a	
Desirable Forb S	pecies		5	8	0.7	5.3	0.0	0.7	2.4	8.4	0.92	2.80	
Invasive and Nor	n-Native F	orbs	3	4	5.4	0.7	0.7	0.0	12.1	0.9	0.60	0.80	
Shrubs			2	5	1.3	0.7	0.0	0.0	2.4	0.9	0.14	0.80	
Vegetation Tota	ıls		19	26	51.3	64.7	9.4	11.4	100.0	100.0	1.66	4.40	
			Line	-Point I	ntercept	Soil Surf	ace Cov	er Data ³					
Percent Bare Ground Biotic Crust Herbaceous Duff Rock													
Cover by 2016 201			2010	5 201	20	16 201	7 201	6 2017	2016	2017	2016	2017	
Туре	22.0	25.	3 0.	0 0).0 60	0.0 34	.0 1.	3 2.	7 0.0	0.0	2.0	2.7	
¹ Sum of data from 3 randomly placed 25 meter transects with 50 sample points collected from each transect. Foliar cover based upon 1 st plant species encountered in the canopy at each sample point. Species composition based upon total of all													

plant species encountered at each sample point.

² Sum of density data collected from ten 1-meter square quadrants along each transect. Only forb and shrub densities were recorded based upon reclamation criteria.

³ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.

Substantial positive changes in foliar cover occurred in 2017 as a result of protecting the site from grazing impacts as compared to those values in 2016. Foliar cover increased 34 percent in 2017. The canopy cover of perennial grasses increased 30 percent and a six fold increase in the canopy cover of native forb species occurred in 2017. Canopy gaps between perennial species declined 37 percent. The canopy cover of invasive and non-native weedy species declined 69 percent. The amount of unprotected bare ground did increase 13 percent. In 2017, the densities of desirable forbs increased 67 percent and shrub densities increased 83 percent.

Table 8 is a comparison of the data collected for reclaimed well pad 5H-1V with that of the rolling loam rangeland reference areas. Only the data required to access the success of achieving successful reclamation is used in Table 8.

Table 8 – Comp	Table 8 – Comparison of Reclamation Criteria Elements with Undisturbed Reference Areas												
Site	# desired plant species% desired foliar cover% bare groundshrub density (#/m²)forb density (#/m²)												
Reclaimed Pad 5H-1V	21 species	61.3	25.3	0.8	2.8								
Reference Area ¹	30 species	67.0	17.0	2.2	5.65								
¹ The average of four undisturbed native rangelands reference areas were used as the base for evaluating													

success of the reclamation criteria.

Evaluation of successful reclamation of the disturbance on Well Pad 5H-1V:

• There are 21 desirable plant species established on the site (8 perennial grasses, 8 desirable forbs, and 5 shrubs) meeting the required five plant species.

- Slender wheatgrass (*Elymus trachycaulus*) was the desired species with the greatest relative cover at 24% meeting the requirement that no one species can exceed 70% relative cover.
- The foliar cover of desirable species on the site was 91% of that on the rolling loam rangeland reference area meeting the requirement of 80% similarity.
- The amount of unprotected bare ground on the site was 33% greater than on the rolling loam rangeland reference area which equates to 67% similarity, not meeting the required 80% similarity.
- The density of forbs and shrubs on the site in comparison with the rolling loam rangeland reference area was 50% and 36%, respectively. Neither forb density nor shrub density have met the requirement of 80% similarity.

The plant community established on this site has a good representation of the perennial grasses used in the seed mix. Perennial forbs and shrubs showed significant improvements in 2017. The plant community does not meet the bare ground, shrub density nor forb density criteria established for successful reclamation of the disturbance at this site. The fenced protection provided to the site in 2017 should result in this site achieving the necessary criteria.

Well Pad 91-2H

This site was within the 10th growing season since being reclaimed when data was collected on July 31, 2017. Three 25 meter transects were placed in a parallel pattern on the pad with 50 sample points on each transect for a total of 150 points for cover data. Ten one meter square density quadrants were placed along each transect for a total of 30 quadrants. Data collected from this site include vegetative foliar and basal cover, species composition, forb and shrub densities and ground cover all summarized by plant group. In addition, ground cover data was collected for dead vegetative litter, bare ground and surface rock. Table 9 compares the data collected in 2016 and in 2017 for this site.

	Table 9 - Reclaimed Pad 91-2H Vegetation Cover, Species Composition, Species Density & Ground Cover														
-	veg	etation	i Cover,	Species		-	ion, Spe it Canop			•		ver	Density	Data ²	
		Ī	Numł Spe			% Fo Cov			Ba Cove		Spe Comp			Forb/Shrub Density (#/m ²)	
Plant G	Froup		2016	2017	20	16	2017	2016	;	2017	2016	2017	2016	2017	
Perennial Grasse	S		10	7	3	31.3	42.0	4.	0	6.7	37.2	71.1	n/a	n/a	
Invasive Non-Na	tive Grass	es	1	1		7.3	0.6	0.	0	0	7.9	1.0	n/a	n/a	
Desirable Forb S	pecies		6	8	1	6.7	1.3	2.	0	0	25.5	3.1	1.89	2.80	
Invasive and Nor	1-Native F	orbs	5	3		8.7	0.7	0.	0	2.0	10.9	2.1	0.57	.93	
Shrubs			4	5	1	8.7	14.0	0.	0	0	9.5	22.7	0.40	1.90	
Vegetation Tota	ls		26	24	7	2.7	58.74	6.	0	8.7	100.0	100.0	2.86	5.63	
			Line	-Point I	ntero	cept S	oil Surfa	nce Co	ver	Data ³					
Percent	Bare Ground Biotic Crust Litter Woody Litter Duff Rock														
Cover by	2016	2017	2010	5 20	17	2016	2017	20	16	2017	2016	2017	2016	2017	
Type 16.7 20.0 0.0 0.0 46.7 39.3 3.3								6.7	7 0.0	0.0	2.7	2.0			
¹ Sum of data from 3 randomly placed 25 meter transects with 50 sample points collected from each transect. Foliar cover based upon 1 st plant species encountered in the canopy at each sample point. Species composition based upon total of all plant species encountered at each sample point.															

 2 Sum of density data collected from ten 1-meter square quadrants along each transect. Only forb and shrub densities were recorded based upon reclamation criteria.

³ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.

In the data collected in 2016 well pads 4A-1V, 91-2H and 93-4H were combined as one site. Differences in the plant communities on these sites were observed in 2017 so data was collected from each and treated as a separate site. The 2017 data in the Table 9 is summarized from data presented in Appendix Table E1. Each plant species encountered at this site is listed in Table E1. As shown in Table E1 there is a good representation of the seeded species established on the site.

Part of this site is fenced within the same enclosure as for pads 4A-1V and 93-4H with the remainder not fenced to exclude livestock. Two of the three transects for this site were sampled outside the fenced enclosure with one inside. This site was heavily grazed by cattle both inside and outside the fenced enclosure prior to the time sampling data was collected on July 31, 2017. Most of the perennial grasses and forbs were heavily grazed. The climatic conditions in 2017 were unfavorable following the grazing event not providing sufficient soil moisture to allow any regrowth of the grazed species.

Total vegetative canopy cover declined 25 percent in 2017, however, canopy cover of perennial species increased 1 percent. The amount of unprotected bare ground increased 17 percent. Canopy gaps measured along the transect tapes are an indicator of the cover of perennial species. Canopy cover of perennial species declined 1 percent, however, gaps between canopies of perennial species declined 21 percent in 2017.

Positive changes that occurred in 2017 were the densities of desirable forb increased 33 percent and the densities of shrubs increased 79 percent. Also positive was a 92 percent decline in the densities invasive and non-native forb species and the canopy cover of cheatgrass declined 89 percent.

Table 10 is a comparison of the data collected for reclaimed well pads 91-2H with that from the pre-disturbance reference area for the site and that of the rolling loam rangeland reference area. Only the data required to access the success of achieving successful reclamation is used in Table 10.

Table 10 – Comparison of Reclamation Criteria Elements with Undisturbed Reference Areas												
Site# desired plant species% desired foliar cover% bare groundshrub density (#/m²)forb density (#/m²)												
Reclaimed Pad 91-2H	20 species	57.3	20.0	1.9	2.8							
Reference Area ¹ 30 species 67.0 17.0 2.2 5.65												
¹ The average of four un	disturbed native ra	ngelands referen	ce areas were u	sed as the base for	evaluating							

success of the reclamation criteria.

Evaluation of successful reclamation of the disturbance on Well Pad sites 91-2H:

• There are 20 desirable plant species established on the site (7 perennial grasses, 8 desirable forbs, and 5 shrubs) meeting the required five plant species.

- Crested wheatgrass (*Agropyron cristatum*) was the desired species with the greatest relative cover at 13.3% meeting the requirement that no one species can exceed 70% relative cover.
- The foliar cover of desirable species on the site was 86% of that on the rolling loam rangeland reference areas meeting the requirement of 80% similarity.
- The amount of unprotected bare ground on the site was 15% greater than on the rolling loam rangeland reference areas which equates to 85% similarity, meeting the required 80% similarity.
- The density of forbs and shrubs on the site in comparison with the rolling loam rangeland reference areas was 50% and 86%, respectively. The criteria only require either forb density or shrub density meet the requirement of 80% similarity. The shrub density has 86% similarity which meets this criteria.

The plant community established on this site has met all the criteria established for successful reclamation of the disturbance with the exception of desirable forb density. The vegetation community established on this site is representative of the seed mix utilized, and will likely persist without intervention. It is meeting the criteria established for successful reclamation of the disturbance at this site.

Well Pad 93-2M

This site was within the 7th growing season since being reclaimed when data was collected on July 27, 2017. Three 25 meter transects were placed in a spoke pattern on the pad with 50 sample points on each transect for a total of 150 points for cover data. Ten one meter square density quadrants were placed along each transect for a total of 30 quadrants. Data collected from this site include vegetative foliar and basal cover, species composition, forb and shrub densities and ground cover all summarized by plant group. In addition, ground cover data was collected for dead vegetative litter, bare ground and surface rock. Table 11 compares the data collected in 2016 and in 2017 for this site.

The 2017 data in the Table 11 is summarized from data presented in Appendix Table F1. Each plant species encountered at this site is listed in Table F1. As shown in Table F1 there is a good representation of the seeded species established on the site.

Table 11 - Reclaimed Pad 93-2M Vegetation Cover, Species Composition, Species Density & Ground Cover										
	Line-Point Canopy Intercept Data ¹ Density Data ²									
		Number of Species % Foliar % Basal Cover Species Forb/Shr Cover Cover Cover Composition Density (#/								
Plant Group	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Perennial Grasses	8	8	54.7	36.7	9.3	5.4	62.3	81.8	n/a	n/a
Invasive Non-Native Grasses	1	1	13.3	0.0	0	0.0	24.0	1.4	n/a	n/a
Desirable Forb Species	5	7	2.0	0.0	0	0.0	1.9	0.0	0.90	0.77
Invasive and Non-Native Forbs	5	3	6.0	1.3	0	0.0	32.5	2.8	0.57	0.93
Shrubs	4	5	2.7	5.3	0	0.0	3.2	14.1	0.33	1.03
Vegetation Totals	23	24	78.7	43.4	9.3	5.4	100.0	100.0	1.80	2.73

	Table 11 - Reclaimed Pad 93-2M Vegetation Cover, Species Composition, Species Density & Ground Cover											
	Line-Point Intercept Soil Surface Cover Data ³											
Percent												
Cover by Bare Ground Biotic Crust Litter Woody Litter Duff Rock												
Туре	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
- 5 P*	20.1	25.3	0.0	0.0	55.1	44.0	2.0	2.0	0.0	0.0	0.0	0.70
¹ Sum of data fro	m 3 rando	mly plac	ed 25 me	ter transed	cts with t	50 sample	e points c	collected fi	rom eacl	h transect	. Foliar c	over
based upon 1st pl	ant species	encount	tered in th	ne canopy	at each	sample po	oint. Spe	cies comp	osition b	based upo	n total of	all
plant species enc	-							•		•		
$\frac{1}{2}$ Sum of density data collected from ten 1-meter square quadrants along each transect. Only forb and shrub densities were												
recorded based upon reclamation criteria.												
³ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru												
the lower layers												

This site is fenced to exclude livestock and no livestock grazing was observed at the time of sampling. One very notable change observed was a significant die-off of pubescent wheatgrass (*Thinopyrum intermedium*) across the site. Most of the growth from 2016 was still present but obviously dead and the standing dead was easily uprooted. Canopy cover for this species declined 74 percent from 2016 and basal cover declined 85 percent. It is likely this species could not maintain its' composition in the community due to unfavorable climatic conditions and greater competition from other species.

Total vegetative canopy cover declined 45 percent in 2017, with a decline of 29 percent in canopy cover of perennial species. The amount of unprotected bare ground increased 21 percent. Canopy gaps measured along the transect tapes are an indicator of the cover of perennial species. Canopy cover of perennial species declined 29 percent, however, gaps between canopies of perennial species only declined 12 percent.

Positive changes that occurred in 2017 were the improvements in shrubs with canopy cover increases of 49 percent and densities increases of 68 percent. Also positive was a 78 percent decline in the densities invasive and non-native forb species and the canopy cover of cheatgrass declined 100 percent.

Table 12 is a comparison of the data collected for reclaimed well pads 93-2M with that from the pre-disturbance reference area for the site and that of the rolling loam rangeland reference area. Only the data required to access the success of achieving successful reclamation is used.

Table 12 – Com	Table 12 – Comparison of Reclamation Criteria Elements with Undisturbed Reference Areas										
Site# desired plant species% desired foliar cover% bare groundshrub density (#/m²)forb density (#/m²)											
Reclaimed Pad 93-2M	20 species	42.0	25.3	1.03	0.77						
Reference Area ¹ 30 species 67.0 17.0 2.2 5.65											
¹ The average of four undisturbed native rangelands reference areas were used as the base for evaluating											

success of the reclamation criteria.

Evaluation of successful reclamation of the disturbance on Well Pads sites 93-2M:

• There are 20 desirable plant species established on the site (8 perennial grasses, 7 desirable forbs, and 5 shrubs) meeting the required five plant species.

- Russian wildrye (*Psathyrostachys juncea*) was the desired species with the greatest relative cover at 20.0% meeting the requirement that no one species can exceed 70% relative cover.
- The foliar cover of desirable species on the site was 63% of that on the rolling loam rangeland reference areas not meeting the requirement of 80% similarity.
- The amount of unprotected bare ground on the site was 33% greater than on the rolling loam rangeland reference areas which equates to 67% similarity, not meeting the required 80% similarity.
- The density of forbs and shrubs on the site in comparison with the rolling loam rangeland reference areas was 14% and 47%, respectively. The criteria only require either forb density or shrub density meet the requirement of 80% similarity which neither have met the required criteria.

The plant community established on this site has not met the required criteria for foliar cover of desirable species, densities of shrubs or forbs nor the amount of bare ground. This plant community is representative of the seed mix utilized, is capable of persisting without continued intervention and should allow plant community successional processes to progress.

Well Pads 93-4H

This site was within the 10th growing season since being reclaimed when data was collected on July 28, 2017. Three 25 meter transects were placed in a spoke pattern on the pad with 50 sample points on each transect for a total of 150 points for cover data. Ten one meter square density quadrants were placed along each transect for a total of 30 quadrants. Data collected from this site include vegetative foliar and basal cover, species composition, forb and shrub densities and ground cover all summarized by plant group. In addition, ground cover data was collected for dead vegetative litter, bare ground and surface rock. Table 13 compares the data collected in 2016 and in 2017 for this site.

Table 13 - Reclaimed Pad 93-4H Vegetation Cover, Species Composition, Species Density & Ground Cover												
					Line-Po	int Canoj	oy Interco	ept Data ¹	l		Density Data ²	
			Numb			Foliar	% B		Spee		Forb/Shrub	
		Ļ	Spe	cies	C	over	Co	ver	Compo	osition	Density	(#/ m ²)
Plant C	Froup		2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Perennial Grasse	s		10	6	31.3	16.0	4.0	2.0	37.2	41.4	n/a	n/a
Invasive Non-Na	ative Grass	es	1	1	7.3	0.7	0.0	0.0	7.9	1.7	n/a	n/a
Desirable Forb S	pecies		6	7	16.7	6.7	2.0	0.7	25.5	20.7	1.89	3.67
Invasive and Nor	n-Native F	orbs	5	5	8.7	8.0	0.0	0.0	10.9	22.4	0.57	4.50
Shrubs			4	4	8.7	5.3	0.0	0.0	9.5	13.8	0.40	0.40
Vegetation Tota	ıls		26	23	72.7	36.7	6.0	2.7	100.0	100.0	2.86	8.57
			Line	Point In	ntercept	Soil Surfa	ace Cover	r Data ³				
Percent		Herbaceous										
	Cover by Bare Grou			tic Crus	t	Litter	Woo	dy Litter	I	Duff	Rock	
•	2016	2017	2016	5 201	7 20	16 2017	2016	2017	2016	2017	2016	2017
Туре	16.7	31.3	0.	0 0	0.0 46	.7 36.	7 3.3	9.3	6 0.0	0.0	2.7	4.7

Table 13 - Reclaimed Pad 93-4H

Vegetation Cover, Species Composition, Species Density & Ground Cover

¹ Sum of data from 3 randomly placed 25 meter transects with 50 sample points collected from each transect. Foliar cover based upon 1st plant species encountered in the canopy at each sample point. Species composition based upon total of all plant species encountered at each sample point.

 2 Sum of density data collected from ten 1-meter square quadrants along each transect. Only forb and shrub densities were recorded based upon reclamation criteria.

³ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.

In the data collected in 2016 well pads 4A-1V, 91-2H and 93-4H were combined as one site. Differences in the plant communities on these sites were observed in 2017 so data was collected from each and treated as a separate sites. The 2017 data in the Table 13 is summarized from data presented in Appendix Table G1. Each plant species encountered at this site is listed in Table G1. As shown in Table G1 there is a good representation of the seeded species established on the site.

This site was heavily grazed by cattle prior to the time sampling data was collected on July 28, 2017. The site is fenced to exclude livestock but several areas of the fence along the northeast side of the enclosure have been damaged by cattle allowing them access to the site. Most of the perennial grasses and forbs were heavily grazed. The climatic conditions in 2017 were unfavorable following the grazing event not providing sufficient soil moisture to allow any regrowth of the grazed species.

Substantial changes in foliar cover and bare ground occurred in 2017 as a result of the grazing impacts to the site as compared to those values in 2016. Total vegetative canopy cover declined 53 percent in 2017. The amount of unprotected bare ground increased 47 percent. Canopy gaps measured along the transect tapes are an indicator of the cover of perennial species. Canopy cover of perennial species declined 51 percent and gaps between canopies of perennial species increased 36 percent in 2017.

An 87 percent increase in the densities invasive and non-native forb species occurred in 2017. Positive changes that occurred in 2017 was that desirable forb densities increased 49 percent and canopy cover of cheatgrass declined 87 percent.

Table 14 is a comparison of the data collected for reclaimed well pads 93-4H with that from the pre-disturbance reference area for the site and that of the rolling loam rangeland reference area. Only the data required to access the success of achieving successful reclamation is used in Table 14.

Table 14 – Com	parison of Reclam	ation Criteria E	lements with U	ndisturbed Refere	ence Areas						
Site	# desired plant species	% desired foliar cover	% bare ground	shrub density (#/m ²)	forb density (#/m ²)						
Reclaimed Pad 93-4H	17 species	28.0	31.3	0.4	3.67						
Reference Area ¹	30 species	67.0	17.0	2.2	5.65						
	¹ The average of four undisturbed native rangelands reference areas were used as the base for evaluating success of the reclamation criteria.										

Evaluation of successful reclamation of the disturbance on Well Pads sites 93-4H:

- There are 17 desirable plant species established on the site (6 perennial grasses, 7 desirable forbs, and 4 shrubs) meeting the required five plant species.
- Russian wildrye (*Psathyrostachys juncea*) was the desired species with the greatest relative cover at 8.7 % meeting the requirement that no one species can exceed 70 % relative cover.
- The foliar cover of desirable species on the site was 42% of that on the rolling loam rangeland reference areas not meeting the requirement of 80% similarity.
- The amount of unprotected bare ground on the site was 46% greater than on the rolling loam rangeland reference areas which equates to 54% similarity, not meeting the required 80% similarity.
- The density of forbs and shrubs on the site in comparison with the rolling loam rangeland reference areas was 65% and 18%, respectively. The criteria only require either forb density or shrub density meet the requirement of 80% similarity which neither have met the required criteria.

The plant community established on this site is representative of the seed mix utilized, is capable of persisting without continued intervention and should allow plant community successional processes to progress. Increased vigilance to maintain the enclosure fence to protect the site from extensive livestock grazing use, should allow the plant community to meeting the criteria established for successful reclamation of the disturbance at this site.



	Table A1 - Vegetation C	over, Species Composition, Native Rangeland Referen		nsity & Gr	ound Cover		
	Plant Species Observed withi	n Study Area	Line-Poi	nt Canopy I	ntercept Data ¹	Density Data ²	
Species Symbol	Scientific Name	Common Name	% Foliar Cover	% Basal Cover	Species Composition		
ACHY	Achnatherum hymenoides	Indian ricegrass	1.0	0.0	2.3		
ELELE	Elymus elymoides ssp.	bottlebrush squirreltail	1.0	1.0	2.9		
	elymoides	concortaon squinentain	1.0	1.0	2.9		
HECO26	Hesperostipa comata	needle & thread	24.0	4.5	33.7		
KOMA	Koeleria macrantha	prairie junegrass	3.5	2.0	8.1		
PASM	Pascopyrum smithii	western wheatgrass	9.0	0.0	12.2	Forb/Shrub	
POSE	Poa secunda	Sandberg bluegrass	5.0	0.5	6.4	Density	
		Totals for Perennial Grasses	43.5	8.0	65.6	$(\#/m^2)$	
ANDI2	Antennaria dimorpha	low pussytoes	0.0	0.0	0.0	0.15	
ASCO12	Astragalus convallarius	lesser-rushy mlkvetch	0.0	0.0	0.0	0.10	
CAFI	Carex filifolia	threadleaf sedge	0.0	0.0	0.0	0.15	
CALI4	Castilleja linariifolia	Wyoming Indian paintbrush	0.0	0.0	0.6	0.03	
CRAC	Crepis acuminata	longleaf hawksbeard	0.0	0.0	0.0	0.08	
CRFL6	Cryptantha flavoculata	roughseed cryptanth	0.0	0.0	0.0	0.03	
CRSE	Cryptantha sericea	silky catseye	0.0	0.0	0.0	0.10	
EREA	Erigeron eatonii	Eaton's fleabane	0.0	0.0	0.6	0.53	
HEBO	Hedysarum boreale	Utah sweetvetch	0.5	0.5	0.6	0.03	
LEER	Leucelene ericoides	heath aster	0.0	0.0	0.0	0.10	
MAGR2	Machaeranthera grindelioides	rayless tansyaster	0.0	0.0	0.0	0.10	
OPPO	Opuntia polyacantha	plains pricklypear cactus	0.0	0.0	0.0	0.05	
PAMU11	Pakera multilobata	lobeleaf groundsel	0.0	0.0	0.0	0.05	
PEFRF5	Penstemon fremontii var. fremontii	Fremont beardtongue	0.0	0.0	0.0	0.03	
PHHO	Phlox hoodii	Hood's phlox	1.0	0.0	1.7	1.10	
PHLO2	Phlox longifolia	longleaf phlox	0.0	0.0	0.6	0.00	
SPCO	Sphaeralcea coccinea	scarlet globemallow	0.0	0.0	1.2	3.05	
	Total	ls for Desirable Forb Species	1.5	0.5	5.3	5.65	
ARTRW	Artemisia tridentata var. wyomingensis	Wyoming big sagebrush	19.0	0.5	23.3	1.38	
CHDE2	Chrysothamnus depressus	longflower rabbitbrush	0.0	0.0	0.0	0.03	
CHVI8 ³	Chrysothamnus viscidiflorus	yellow rabbitbrush	0.0	0.0	0.0	0.00	
GUSA2	Gutierrezia sarothrae	broom Snakeweed	2.5	0.0	2.9	0.75	
JUOS	Juniperus osteosperma	Utah juniper	0.5	0.0	0.6	0.03	
KRLA2 ³	Krascheninnikovia lanata	winterfat	0.0	0.0	0.0	0.00	
SAVE4	Sarcobatus vermiculatus	greasewood	0.0	0.0	0.0	0.03	
		Totals for Shrubs	22.0	0.5	26.8	2.20	
ALDE	Alyssum desertorum	desert madwort	0.0	0.0	0.0	0.28	
BRTE	Bromus tectorum	cheatgrass	1.5	0.0	2.3	not collected	
LECA5	Lepidium campestre	field pepperweed	0.0	0.0	0.0	0.05	
	Totals for Inva	sive and Non-Native Species	1.5	0.0	2.3	0.33	
		Vegetation Totals	68.5	9.0	100.0	8.18	
from each tra	a from 4 randomly placed 50 mete ansect. Foliar cover based upon 1 st	plant species encountered in th	e canopy at	Percent G	round Cover by (Cover Type ⁴	
	point. Species composition based	upon total of all plant species en	ncountered		Bare Grou	und 17.0	
at each samp	ble point.				Biotic Cr		
² Sum of der	nsity data collected from 10 one-sq	uare meter quadrants along each	h transect.		Herbaceous Li		
	d shrub densities were recorded ba				Woody Li		
Plant speci	es not encountered in sampling dat	ta but were present within the st	udy area.				
	s are not cumulative with vegetation					Duff 0.0	
ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.							

Appendix A – Vegetation Sampling Data Native Rangeland Reference Areas

Table A2 - Canopy Gap Intercept Data Native Rangeland Reference Areas										
	Total of Gaps > 20 cm	Gaps 21-50 cm	Gaps 51-100 cm	Gaps 101-200 cm	Gaps >200 cm					
Transect 1	1036	639	397	0	0					
Transect 2	970	747	223	0	0					
Transect 3	1054	827	227	0	0					
Transect 4	1043	718	325	0	0					
Total Gaps (cm) 4103 2931 1172 0 0										
% Line in Gaps 20.52 14.66 5.86 0.00 0.00										
Line length for each	Line length for each transect was 50 meters for site total length of 200 meters									

	Table A3 - Transect Coordinate Locations Native Rangeland Reference Areas (Datum: UTM Zone 12, WGS 84)									
	Azimuth from	Transect Sta	rting Point	Transect En	ding Point					
Site	starting point (true N) Northing (mN) Easting (mE) Northing (mN) Easting (mE)									
Transect 1	023°	4423160.586	725398.2138	4423207.123	725412.6625	50 meters				
Transect 2	152°	4423213.988	725216.4047	4423172.572	725236.1048	50 meters				
Transect 3	073°	4423404.413	725351.3151	4423424.434	725397.1694	50 meters				
Transect 4	176°	4424431.522	725544.0816	4424382.176	725547.3382	50 meters				

Transect Photos Native Rangeland Reference Areas



Figure A1 Rolling Loam Rangeland Reference Area Transect #1



Figure A2 Rolling Loam Rangeland Reference Area Transect #2



Figure A3 Rolling Loam Rangeland Reference Area Transect #3



Figure A4 Rolling Loam Rangeland Reference Area Transect #4

Table B1 - Vegetation Cover, Species Composition, Species Density & Ground Cover Reclaimed Pad 1-3A									
	Plant Species Observed with		1	nt Canopy I	ntercept Data ¹	Density Data ²			
Species Symbol	Scientific Name	Common Name	% Foliar Cover	% Basal Cover	Species Composition				
AGCR	Agropyron cristatum	crested wheatgrass	1.3	0.0	2.4				
ELLAL	Elymus lanceolatus	thickspike wheatgrass	2.7	0.7	4.9				
ELTR7	Elymus trachycaulus	slender wheatgrass	6.7	1.3	13.4				
LECI4	Leymus cinereus	basin wildrye	1.3	0.7	2.4				
NAVI4	Nassella viridula	green needlegrass	7.3	1.3	13.4				
PASM	Pascopyrum smithii	western wheatgrass	2.0	0.0	3.7				
PSJU3	Psathyrostachys juncea	Russian wildrye	7.3	0.0	14.6	Forb/Shrub			
THIN6	Thinopyrum intermedium	pubescent wheatgrass	0.7	0.0	1.2	Density			
		Totals for Perennial Grasses	29.3	4.0	56.1	$(\#/m^2)$			
ASCI4	Astragalus cicer	cicer milkvetch	0.0	0.0	1.2	0.43			
CRFL6	Cryptantha flavoculata	roughseed cryptanth	0.0	0.0	0.0	0.07			
LILE3	Linum lewisii	Lewis flax	2.7	0.0	6.1	1.33			
MACA2	Machaeranthera canescens	hoary tansyaster	1.3	0.0	2.4	0.90			
MESA	Medicago sativa	alfalfa	4.0	1.3	8.5	1.87			
PEPA8	Penstemon palmeri	Palmer's penstemon	0.0	0.0	1.2	0.00			
SPCO	Sphaeralcea coccinea	scarlet globernallow	0.0	0.0	0.0	0.03			
		als for Desirable Forb Species	8.0	1.3	19.5	4.63			
ATCA2	Atriplex canescens	four-wing saltbush	2.0	0.0	3.7	0.43			
CHVI8	Chrysothamnus viscidiflorus	vellow rabbitbrush	0.7	0.0	1.2	0.17			
ERNA10	Ericameria nauseosa	rubber rabbitbrush	0.0	0.0	0.0	0.03			
KRLA2	Krascheninnikovia lanata	winterfat	1.3	0.0	4.9	0.23			
	,	Totals for Shrubs	4.0	0.0	9.8	0.86			
BRTE	Bromus tectorum	cheatgrass	3.3	0.0	6.1	0.00			
DESO2	Descurainia sophia	yellow mustard	0.7	0.0	1.2	0.13			
MEOF	Melilotus officinalis	vellow sweetclover	1.3	0.0	2.4	1.83			
SATR12	Salsola tragus	Russian thistle	2.7	0.0	4.9	1.73			
		asive and Non-Native Species	8.0	0.0	14.6	3.69			
		Vegetation Totals	49.3	5.3	100.0	9.18			
	a from 3 randomly placed 25 met ansect. Foliar cover based upon 1		round Cover by (
	point. Species composition based			Dec. C	267				
at each samp	le point.			Bare Grou Biotic Ci					
² Sum of den	sity data collected from 10 one-s	quare meter quadrants along each	h transect.						
Only forb an	d shrub densities were recorded b	based upon reclamation criteria.			Herbaceous Li				
	es not encountered in sampling da				Woody Li				
	s are not cumulative with vegetat					Duff 0.0			
	r from the top layer thru the lowe no vegetative, litter or rock cove		R	ock 0.0					

Appendix B – Vegetation Sampling Data Reclaimed Well Pad 1-3A

	Table B2 - Canopy Gap Intercept Data Reclaimed Pad 1-3A										
Canopy Gaps > 20 continutorsTotal of Gaps > 20 cmGaps 21-50 cmGaps 51-100 cmGaps 101-200 cmGaps >200 cm										200 cm	
centimeters	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	
Transect 1	974	1190	230	276	600	504	144	410	0	0	
Transect 2	431	955	197	320	234	485	0	150	0	0	
Transect 3	704	1108	296	152	181	427	0	306	227	223	
Total Gaps (cm)	2109	3253	723	748	1015	1416	144	866	227	223	
% Line in Gaps	28.12	43.37	9.64	9.97	13.53	18.88	1.92	11.55	3.03	2.97	
Line length for each transect was 25 meters for site total length of 75 meters											

	Table B3 - Transect Coordinate LocationsReclaimed Pad 1-3A (Datum: UTM Zone 12, WGS 84)									
Azimuth from Transect Starting Point Transect Ending Point										
Site	starting point (true N)	Northing (mN)	Easting (mE)	Northing (mN)	Easting (mE)	Length				
Transect 1	146°	4423297.316	725216.3378	4423281.145	725233.0678	25 meters				
Transect 2	208°	4423297.059	725207.6206	4423280.97	725197.0615	25 meters				
Transect 3	318°	4423302.425	725208.7451	4423327.68	725202.3535	25 meters				

Transect Photos and Transect Layout Plot



Figure B1 Transect 1 Reclaimed Pad 1-3A



Figure B3 Transect 3 Reclaimed Pad 1-3A



Figure B2 Transect 2 Reclaimed Pad 1-3A



Figure B4 Pad 1-3A Transect Layout

	Table C1 - Vegetation	Cover, Species Compositio Reclaimed Pad 44	—	Density & G	round Cover					
	Plant Species Observed with	in Study Area	Line-Po	int Canopy I	ntercept Data ¹	Density Data ²				
Species Symbol	Scientific Name	Common Name	% Foliar Cover	% Basal Cover	Species Composition					
ACHY	Achnatherum hymenoides	Indian ricegrass	0.7	0.0	1.7					
ELLAL	Elymus lanceolatus	thickspike wheatgrass	0.0	0.0	1.7					
ELTR7	Elymus trachycaulus	slender wheatgrass	6.0	1.3	15.0					
LECI4	Leymus cinereus	basin wildrye	0.7	0.0	1.7					
NAVI4	Nassella viridula	green needlegrass	0.7	0.0	1.7					
PASM	Pascopyrum smithii	western wheatgrass	0.7	0.0	1.7	Forb/Shrub				
PSJU3	Psathyrostachys juncea	Russian wildrye	10.7	2.7	30.0	Density				
	Т	otals for Perennial Grasses	19.3	4.0	53.3	(#/m ²)				
ASCI4	Astragalus cicer	cicer milkvetch	0.0	0.0	0.0	0.17				
GRSQ	Grindelia squarrosa	curlycup gumweed	0.0	0.0	0.0	0.33				
LILE3	Linum lewisii	Lewis flax	1.3	0.0	3.3	1.50				
MESA	Medicago sativa	alfalfa	9.3	2.0	28.3	4.23				
SPPA2 ³	Sphaeralcea parvifolia	small-leaf globernallow	0.0	0.0	0.0	0.00				
	Totals	for Desirable Forb Species	10.7	2.0	31.7	6.23				
ATCA2	Atriplex canescens	four-wing saltbush	0.7	0.0	1.7	0.03				
CHVI8 ³	Chrysothamnus viscidiflorus	yellow rabbitbrush	0.0	0.0	0.0	0.00				
ERNA10 ³	Ericameria nauseosa	rubber rabbitbrush	0.0	0.0	0.0	0.00				
GUSA2	Gutierrezia sarothrae	broom Snakeweed	0.0	0.0	0.0	0.20				
		Totals for Shrub	0.7	0.0	1.7	0.23				
BRTE	Bromus tectorum	cheatgrass	0.0	0.0	0.0	n/a				
BASC5 ³	Bassia scoparia	burningbush	0.0	0.0	0.0	0.00				
MEOF	Melilotus officinalis	yellow sweetclover	1.3	0.0	3.3	0.87				
SATR12	Salsola tragus	Russian thistle	3.3	0.0	10.0	1.10				
	Totals for Invas	ive and Non-Native Species	4.7	0.0	13.3	1.97				
		Vegetation Totals	35.3	6.0	100.0	8.43				
	Sum of data from 3 randomly placed 25 meter transects with 50 sample points									

Appendix C – Vegetation Sampling Data Reclaimed Well Pads 4A-1V

collected from each transect. Foliar cover based upon 1st plant species encountered in Percent Ground Cover by Cover Type the canopy at each sample point. Species composition based upon total of all plant species encountered at each sample point. ² Sum of density data collected from 10 one-square meter quadrants along each

transect. Only forb and shrub densities were recorded based upon reclamation criteria.

³ Plant species not encountered in sampling data but were present within the study area.

⁴ Percentages are not cumulative with vegetation totals, rather a measure by layer of ground cover from the top layer thru the lower layers to the soil surface. Values for bare ground have no vegetative, litter or rock cover above the soil surface.

Bare Ground	34.7
Biotic Crust	0.0
Herbaceous Litter	31.3
Woody Litter	4.0
Duff	0.0
Rock	8.0
	Biotic Crust Herbaceous Litter Woody Litter Duff

	Table C2 - Canopy Gap Intercept Data Reclaimed Pad 4A-1V													
Canopy Gaps > 20	Total of 20	-	- (-ans 21-50 cm -					Gaps 101-200 cm		Gaps >200 cm				
centimeters	2016 ¹	2017 ²	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				2016 ¹	2017 ²	2016 ¹	2017 ²				
Transect 1	1632	1200	226	231	745	818	661	151	0	0				
Transect 2	2061	1621	688	223	642	647	249	468	482	283				
Transect 3	2180	1474	383	288	960	935	837	251	0	0				
Total Gaps (cm)	5873	4295	1297	742	2347	2400	1747	870	482	283				
% Line in Gaps	% Line in Gaps 39.15 57.27 8.65 9.89 15.65 32.00 11.65 11.60 3.21 3.77													
	¹ Line length for each transect was 50 meters for site total length of 150 meters ² Line length for each transect was 25 meters for site total length of 75 meters													

	Table C3 - Transect Coordinate Locations Reclaimed Pad 4A-1V (Datum: UTM Zone 12, WGS 84)											
	Azimuth from starting point	Transect Sta	Transect Starting Point Transect Ending Point									
Site	(true N)	Northing (mN)	Easting (mE)	Northing (mN)	Easting (mE)	Length						
Transect 1	201°	4423439.43	725130.1098	4423420.939	725117.2268	25 meters						
Transect 2	140°	4423437.21	4423437.21 725137.7026 4423421.321 725156.4767									
Transect 3	064°	4423451.389	725140.0209	4423465.603	725158.59	25 meters						

Transect Photos and Transect Layout Plot



Figure C1 Pad 4A-1V Transect 1



Figure C3 Pad 4A-1V Transect 3



Figure C2 Pad 4A-1V Transect 2



Figure C4 Pad 4A-1V Transect Layout

	Table D1 - Vegetation	Cover, Species Composition Reclaimed Pad 5H-1		nsity & Gr	ound Cover	
	Plant Species Observed wi	thin Study Area	Line-Poi	nt Canopy I	ntercept Data 1	Density Data ²
Species Symbol	Scientific Name	Common Name	% Foliar Cover	% Basal Cover	Species Composition	
ELLAL	Elymus lanceolatus	thickspike wheatgrass	10.7	1.3	16.8	
ELTR7	Elymus trachycaulus	slender wheatgrass	24.0	4.0	36.4	
HECO26	Hesperostipa comata	needle & thread needlegrass	0.7	0.0	0.9	
LECI4	Leymus cinereus	basin wildrye	0.7	0.0	0.9	
NAVI4	Nassella viridula	green needlegrass	0.7	0.0	0.9	
PASM	Pascopyrum smithii	western wheatgrass	3.3	0.0	4.7	
PSJU3	Psathyrostachys juncea	Russian wildrye	8.0	2.7	14.0	Forb/Shrub
THIN6	Thinopyrum intermedium	pubescent wheatgrass	7.3	2.7	10.3	Density
	,	Totals for Perennial Grasses	55.3	10.7	85.0	$(\#/m^2)$
ASCI4	Astragalus cicer	cicer milkvetch	2.0	0.7	3.7	0.20
EREA	Erigeron eatonii	Eaton fleabane	0.0	0.0	0.0	0.10
HEBO ³	Hedysarum boreale	Utah sweetvetch	0.0	0.0	0.0	0.00
LILE3	Linum lewisii	Lewis flax	0.7	0.0	0.9	0.57
MACA2	Machaeranthera canescens	hoary tansyaster	1.3	0.0	1.9	1.23
MESA	Medicago sativa	alfalfa	1.3	0.0	1.9	0.17
PEPA8	Penstemon palmeri	Palmer's penstemon	0.0	0.0	0.0	0.23
SPCO	Sphaeralcea coccinea	scarlet globemallow	0.0	0.0	0.0	0.30
		tals for Desirable Forb Species	5.3	0.7	8.4	2.80
ATCA2	Atriplex canescens	four-wing saltbush	0.0	0.0	0.0	0.07
CHVI8	Chrysothamnus viscidiflorus	yellow rabbitbrush	0.0	0.0	0.0	0.07
GUSA2	Gutierrezia sarothrae	broom Snakeweed	0.7	0.0	0.9	0.60
KRLA2	Krascheninnikovia lanata	winterfat	0.0	0.0	0.0	0.03
PUTR2	Purshia tridentata	antelope bittrebrush	0.0	0.0	0.0	0.03
		Totals for Shrubs	0.7	0.0	0.0	0.80
BRTE	Bromus tectorum	cheatgrass (annual grass)	2.7	0.0	4.7	n/a
CIVU	Cirsium vulgare	bull thistle	0.0	0.0	0.0	0.03
DESO2	Descurainia sophia	yellow mustard	0.0	0.0	0.0	0.03
LECA5	Lepidium campestre	field pepperweed	0.0	0.0	0.0	0.67
MEOF	Melilotus officinalis	yellow sweetclover	0.7	0.0	0.9	0.07
		vasive and Non-Native Species	3.3	0.0	5.6	0.80
		Vegetation Totals	64.7	11.4	100.0	4.40
		eter transects with 50 sample point 1 st plant species encountered in th		Percent G	round Cover by	Cover Type ⁴
	e point. Species composition base			P	1	
at each sam	ple point.	r and Francische ender en			Bare Gro	
		square meter quadrants along each	h transect.		Biotic Ci	
Only forb a	nd shrub densities were recorded	based upon reclamation criteria.			Herbaceous Li	
³ Plant spec	ies not encountered in sampling	data but were present within the st			Woody Li	
		ation totals, rather a measure by la				Duff 0.0
	er from the top layer thru the low e no vegetative, litter or rock cov	er layers to the soil surface. Value er above the soil surface.	s for bare		R	ock 2.7

Appendix D – Vegetation Sampling Data Reclaimed Well Pad 5H-1V

Table D2 - Canopy Gap Intercept Data Reclaimed Pad 5H-1V												
Canopy Gaps > 20		al of Gaps > 20 cm Gaps 21-50 cm Gaps 51-100 Gaps 101-2 cm cm cm						-200 Gaps >200 cm				
centimeters	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017		
Transect 1	1386	745	290	441	709	304	146	0	241	0		
Transect 2	734	423	590	152	144	271	0	0	0	0		
Transect 3	936	748	497	372	439	376	0	0	0	0		
Total Gaps (cm)	Total Gaps (cm) 3056 1916 1377 965 1292 951 146 0 241 0											
% Line in Gaps 20.37 12.77 9.18 6.43 8.61 6.34 0.97 0.00 1.61 0.00												
Line length for each tro	insect was	25 meters	for site to	otal length	of 75 met	ers						

	Table D3 - Transect Coordinate Locations Reclaimed Pad 5H-1V (Datum: UTM Zone 12, WGS 84)											
	Azimuth from Transect Starting Point Transect Ending Point											
Site	starting point (true N)	Northing (mN)	Easting (mE)	Northing (mN)	Easting (mE)	Length						
Transect 1	341°	4423199.237	725476.6222	4423221.794	725465.4337	25 meters						
Transect 2	239°	4423194.882	725468.3682	4423181.378	725447.5539	25 meters						
Transect 3	130°	4423192.471	725476.9934	4423177.233	725495.2363	25 meters						

Transect Photos and Transect Layout Plot



Figure D1 Transect 1 Reclaimed Pad 5H-1V



Figure D3 Transect 3 Reclaimed Pad 5H-1V



Figure D2 Transect 2 Reclaimed Pad 5H-1V



Figure D4 Pad 5H-1V Transect Layout

	Table E1 - Vegetation	Cover, Species Compositio Reclaimed Pad 91		Density & (Ground Cover	
	Plant Species Observed withi	n Study Area	Line-P	oint Canopy	⁷ Intercept Data ¹	Density Data ²
Species Symbol	Scientific Name	Common Name	% Foliar Cover	% Basal Cover	Species Composition	
ACHY	Achnatherum hymenoides	Indian ricegrass	0.7	0.0	1.0	
AGCR	Agropyron cristatum	crested wheatgrass	13.3	3.3	21.6	
ELTR7	Elymus trachycaulus	slender wheatgrass	8.0	0.7	13.4	
LECI4	Leymus cinereus	basin wildrye	1.3	0.0	2.1	
PASM	Pascopyrum smithii	western wheatgrass	2.0	0.0	3.1	
PSJU3	Psathyrostachys juncea	Russian wildrye	8.7	2.0	14.4	Forb/Shrub
THIN6	Thinopyrum intermedium	pubescent wheatgrass	8.0	0.7	15.5	Density
	T	otals for Perennial Grasses	42.0	6.7	71.1	$(\#/m^2)$
ASCH	Astragalus chamaeleuce	cicada milkvetch	0.0	0.0	0.0	0.10
ASCI4	Astragalus cicer	cicer milkvetch	0.0	0.0	0.0	0.07
LILE3	Linum lewisii	Lewis flax	1.3	0.0	2.1	0.70
MACA2	Machaeranthera canescens	hoary tansyaster	0.0	0.0	0.0	0.13
MESA	Medicago sativa	alfalfa	0.0	0.0	1.0	1.70
PEPA8	Penstemon palmeri	Palmer's penstemon	0.0	0.0	0.0	0.00
SPCO	Sphaeralcea coccinea	scarlet globemallow	0.0	0.0	0.0	0.03
SPPA2	Sphaeralcea parvifolia	small-leaf globemallow	0.0	0.0	0.0	0.07
	Totals	for Desirable Forb Species	1.3	0.0	3.1	2.80
ARTRW	Artemisia tridentata var. wyomingensis	Wyoming big sagebrush	0.0	0.0	0.0	0.03
ATCA2	Atriplex canescens	four-wing saltbush	4.7	0.0	7.2	0.30
CHVI8	Chrysothamnus viscidiflorus	vellow rabbitbrush	5.3	0.0	8.2	0.63
ERNA10	Ericameria nauseosa	rubber rabbitbrush	2.0	1.3	3.1	0.40
GUSA2	Gutierrezia sarothrae	broom Snakeweed	2.0	0.7	4.1	0.53
000112	Guilerrezia suronnae	Totals for Shrubs	14.0	2.0	22.7	1.90
BRTE	Bromus tectorum	cheatgrass	0.7	0.0	1.0	n/a
ALDE	Alvssum desertorum	desert madwort	0.0	0.0	0.0	0.10
DESO2	Descurainia sophia	vellow mustard	0.0	0.0	0.0	0.10
MEOF	Melilotus officinalis	yellow sweetclover	0.7	0.0	2.1	0.73
		ive and Non-Native Species	1.3	0.0	3.1	0.93
		Vegetation Totals	58.7	8.7	100.0	5.63
	ta from 3 randomly placed 25 met om each transect. Foliar cover bas	er transects with 50 sample po		Percent (Ground Cover by C	Cover Type ⁴
	at each sample point. Species com			5104114 00701 xj c	Jorez Type	
	ountered at each sample point.	i piant		Bare Gro	ound 20.0	
	nsity data collected from 10 one-s	ach		rust 0.0		
	ly forb and shrub densities were r			Herbaceous L		
	ies not encountered in sampling da			itter 6.7		
	es are not cumulative with vegetat]	Duff 0.0
ground cove	er from the top layer thru the lowe	r layers to the soil surface. Val			ŀ	Rock 2.0
ground have	e no vegetative, litter or rock cove	above the soll surface.				

Appendix E – Vegetation Sampling Data Reclaimed Well Pad 91-2H

Table E2 - Canopy Gap Intercept DataReclaimed Pad 91-2H												
Canopy Gaps > 20	Total of 20	-	s > Gaps 21-50 cm		Gaps 51-100 cm		Gaps 101-200 cm		Gaps >200 cm			
centimeters	2016 ¹	2017 ²	$017^2 2016^1 2017^2 2016^1 2017^2 2016^1 2017^2 2016^1 2017^2 2016^1 2017^2 2016^1 2017^2 20$				2016 ¹	2017 ²	2016 ¹	2017 ²		
Transect 1	1632	716	226	286	745	324	661	106	0	0		
Transect 2	2061	860	688	335	642	383	249	142	482	0		
Transect 3	2180	758	383	420	960	193	837	145	0	0		
Total Gaps (cm)	5873	2334	1297	1041	2347	900	1747	393	482	0		
% Line in Gaps	% Line in Gaps 39.15 31.12 8.65 13.88 15.65 12.00 11.65 5.24 3.21 0.00											
	¹ Line length for each transect was 50 meters for site total length of 150 meters ² Line length for each transect was 25 meters for site total length of 75 meters											

	Table E3 - Transect Coordinate Locations Reclaimed Pad 91-2H (Datum: UTM Zone 12, WGS 84)											
	Azimuth from Transect Starting Point Transect Ending Point											
Site	starting point (true N)	Northing (mN)	Easting (mE)	Northing (mN)	Easting (mE)	Length						
Transect 1	034°	4423349.298	725249.6156	4423371.215	725261.884	25 meters						
Transect 2	021°	4423352.885	725235.6526	4423376.422	725242.5699	25 meters						
Transect 3	012°	4423356.888	725224.5	4423377.819	725229.6981	25 meters						

Transect Photos and Transect Layout Plot



Figure E1 Transect 1 Reclaimed Pad 91-2H



Figure E3 Transect 3 Reclaimed Pad 91-2H



Figure E2 Transect 2 Reclaimed Pad 91-2H



Figure E4 Pad 91-2H Transect Layout

	Table F1 - Vegetation	Cover, Species Compositio Reclaimed Pad 93	· · · ·	Density & (Ground Cover	
	Plant Species Observed withi		1	oint Canopy	v Intercept Data ¹	Density Data ²
Species			% Foliar	% Basal	Species	
Symbol	Scientific Name	Common Name	Cover	Cover	Composition	
AGCR	Agropyron cristatum	crested wheatgrass	0.7	0.0	2.8	
ELLAL	Elymus lanceolatus	thickspike wheatgrass	6.0	0.7	12.7	
ELTR7	Elymus trachycaulus	slender wheatgrass	0.7	0.0	1.4	
LECI4	Leymus cinereus	basin wildrye	0.7	0.0	1.4	
NAVI4	Nassella viridula	green needlegrass	4.0	0.0	8.5	
PASM ³	Pascopyrum smithii	western wheatgrass	0.0	0.0	0.0	
PSJU3	Psathyrostachys juncea	Russian wildrye	20.0	4.0	42.3	Forb/Shrub
THIN6	Thinopyrum intermedium	pubescent wheatgrass	4.7	0.7	12.7	Density
		otals for Perennial Grasses	36.7	5.4	81.8	$(\#/m^2)$
ASCI4	Astragalus cicer	cicer milkvetch	0.0	0.0	0.0	0.07
CROC ³	Crepis occidentalis	largeflower hawksbeard	0.0	0.0	0.0	0.00
GRSQ	Grindelia squarrosa	curlycup gumweed	0.0	0.0	0.0	0.43
LILE3	Linum lewisii	Lewis flax	0.0	0.0	0.0	0.13
MESA	Medicago sativa	alfalfa	0.0	0.0	0.0	0.07
PEPA8 ³	Penstemon palmeri	Palmer's penstemon	0.0	0.0	0.0	0.00
SPCO	Sphaeralcea coccinea	scarlet globemallow	0.0	0.0	0.0	0.07
	Totals	for Desirable Forb Species	0.0	0.0	0.0	0.77
	Artemisia tridentata var.					
ARTRW	wyomingensis	Wyoming big sagebrush	0.0	0.0	0.0	0.13
ATCA2	Atriplex canescens	four-wing saltbush	0.0	0.0	0.0	0.03
CHVI8	Chrysothamnus viscidiflorus	yellow rabbitbrush	3.3	0.0	7.0	0.13
ERNA10	Ericameria nauseosa	rubber rabbitbrush	1.3	0.0	2.8	0.03
GUSA2	Gutierrezia sarothrae	broom Snakeweed	0.7	0.0	4.2	0.70
		Totals for Shrubs	5.3	0.0	14.1	1.03
BRTE	Bromus tectorum	cheatgrass	0.0	0.0	1.4	N/A
DESO2	Descurainia sophia	yellow mustard	0.7	0.0	1.4	0.27
LASE ³	Lactuca serriola	prickly lettuce	0.0	0.0	0.0	0.00
MEOF	Melilotus officinalis	yellow sweetclover	0.7	0.0	1.4	0.27
SATR12	Salsola tragus	Russian thistle	0.0	0.0	0.0	0.40
	Totals for Invas	ive and Non-Native Species	1.4	0.0	4.2	0.93
		Vegetation Totals	43.4	5.4	100.0	2.73
¹ Sum of da	ta from 3 randomly placed 25 met		ints		le contra de la co	
	om each transect. Foliar cover bas		Percent (Ground Cover by C	Cover Type ⁴	
	at each sample point. Species com	l plant		Bare Gro	ound 25.3	
species enco	ountered at each sample point.				Biotic C	
² Sum of de	nsity data collected from 10 one-s	square meter quadrants along e	ach		Herbaceous Li	
	ly forb and shrub densities were r ies not encountered in sampling d					
	es are not cumulative with vegetat		ea. Duff			
	er from the top layer thru the lowe				Duff 0.0 Rock 0.70	
•	e no vegetative, litter or rock cove	-	lucs for Date			
ground have	e no vegetative, inter of fock cove	a above the son suitace.				

Appendix F – Vegetation Sampling Data Reclaimed Well Pad 93-2M

	Table F2 - Canopy Gap Intercept Data Reclaimed Pad 93-2M												
Canopy Gaps > 20		Total of Gaps > 20 cm Gaps 21-50 cm			Gaps 51-100 cm		Gaps 1 cr		Gaps >200 cm				
centimeters	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017			
Transect 1	557	510	269	315	288	195	0	0	0	0			
Transect 2	975	1130	292	330	360	668	323	132	0	0			
Transect 3	688	877	388	285	300	592	0	0	0	0			
Total Gaps (cm)	Total Gaps (cm) 2220 2517 949 930 948 1455 323 132 0 0												
% Line in Gaps 29.60 33.56 12.65 12.40 12.64 19.40 4.31 1.76 0.00 0.00													
Line length for each tro	ansect was	25 meters	s for site to	otal length	of 75 met	ers							

	Table F3 - Transect Coordinate Locations Reclaimed Pad 93-2M (Datum: UTM Zone 12, WGS 84)											
	Azimuth from Transect Starting Point Transect Ending Point											
Site	starting point (true N)	Northing (mN)	Easting (mE)	Northing (mN)	Easting (mE)	Length						
Transect 1	171°	4423685.9	725375.6666	4423662.669	725382.8542	25 meters						
Transect 2	252°	4423691.841	725369.9313	4423687.72	725347.0446	25 meters						
Transect 3	333°	4423696.047	725373.1427	4423716.376	725361.7644	25 meters						

Transect Photos and Transect Layout Plot



Figure F1 Transect 1 Reclaimed Pad 93-2M



Figure F2 Transect 2 Reclaimed Pad 93-2M



Figure F3 Transect 3 Reclaimed Pad 93-2M



Figure F4 Pad 93-2M Transect Layout

Table G1 - Vegetation Cover, Species Composition, Species Density & Ground Cover Reclaimed Pad 93-4H								
	Plant Species Observed with	in Study Area	Line-Po	Density Data ²				
Species Symbol	Scientific Name	Common Name	% Foliar Cover	% Basal Cover	Species Composition			
AGCR	Agropyron cristatum	crested wheatgrass	1.3	0.7	3.4			
ELTR7	Elymus trachycaulus	slender wheatgrass	5.3	0.7	13.8			
LECI4	Leymus cinereus	basin wildrye	0.0	0.0	0.0			
NAVI4	Nassella viridula	green needlegrass	0.0	0.0	0.0			
PSJU3	Psathyrostachys juncea	Russian wildrye	8.7	0.7	22.4	Forb/Shrub		
THIN6	Thinopyrum intermedium	pubescent wheatgrass	0.7	0.0	1.7	Density		
		otals for Perennial Grasses	16.0	2.0	41.4	(#/m ²)		
ASCH	Astragalus chamaeleuce	cicada milkvetch	0.0	0.0	0.0	0.03		
ASCI4	Astragalus cicer	cicer milkvetch	1.3	0.0	3.4	0.17		
GRSQ	Grindelia squarrosa	curlycup gumweed	0.7	0.0	1.7	0.13		
LILE3	Linum lewisii	Lewis flax	0.0	0.0	0.0	0.50		
MESA	Medicago sativa	alfalfa	4.7	0.7	15.5	2.70		
PEPA8 ³	Penstemon palmeri	Palmer's penstemon	0.0	0.0	0.0	0.00		
SPPA2	Sphaeralcea parvifolia	small-leaf globemallow	0.0	0.0	0.0	0.13		
	Totals	for Desirable Forb Species	6.7	0.7	20.7	3.67		
ATCA2	Atriplex canescens	four-wing saltbush	1.3	0.0	3.4	0.10		
CHVI8	Chrysothamnus viscidiflorus	yellow rabbitbrush	3.3	0.0	8.6	0.27		
ERNA10	Ericameria nauseosa	rubber rabbitbrush	0.7	0.0	1.7	0.03		
GUSA2	Gutierrezia sarothrae	broom Snakeweed	0.0	0.0	0.0	0.00		
	•	Totals for Shrubs	5.3	0.0	13.8	0.40		
BRTE	Bromus tectorum	cheatgrass	0.7	0.0	1.7	n/a		
ALDE	Alyssum desertorum	desert madwort	0.7	0.0	1.7	0.60		
BASC5	Bassia scoparia	burningbush	0.7	0.0	1.7	0.03		
MEOF	Melilotus officinalis	yellow sweetclover	0.7	0.0	3.4	0.63		
SATR12	Salsola tragus	Russian thistle	6.0	0.0	15.5	3.20		
TAOF	Taraxacum officinale	dandielion	0.0	0.0	0.0	0.03		
	Totals for Invas	8.7	0.0	24.1	4.50			
		Vegetation Totals	36.7	2.7	100.0	8.57		
collected fro	ta from 3 randomly placed 50 me om each transect. Foliar cover ba at each sample point. Species cor	Percent Ground Cover by Cover Type ⁴						
	ountered at each sample point.	Bare Ground 31.3						
	nsity data collected from 10 one-		rust 0.0 itter 36.7					
transect. Only forb and shrub densities were recorded based upon reclamation criteria.					Herbaceous Litter			
³ Plant species not encountered in sampling data but were present within the study					Woody Litter			
area.]	Duff 0.0		
ground cove	es are not cumulative with vegeta er from the top layer thru the low have no vegetative, litter or rock		ł	Rock 4.7				

Appendix G – Vegetation Sampling Data Reclaimed Pad 93-4H

Table G2 - Canopy Gap Intercept DataReclaimed Pad 93-4H										
Canopy Gaps > 20	Total of Gaps > 20 cm		Gaps 21-50 cm		Gaps 51-100 cm		Gaps 101-200 cm		Gaps >200 cm	
centimeters	2016 ¹	2017²	2016 ¹	2017 ²	2016 ¹	2017 ²	2016 ¹	2017²	2016¹	2017 ²
Transect 1	1632	1529	226	166	745	749	661	366	0	248
Transect 2	2061	1311	688	181	642	759	249	149	482	222
Transect 3	2180	1750	383	210	960	839	837	449	0	252
Total Gaps (cm)	5873	4590	1297	557	2347	2347	1747	964	482	722
% Line in Gaps	39.15	61.20	8.65	7.43	15.65	31.29	11.65	12.85	3.21	9.63
¹ Line length for each transect was 50 meters for site total length of 150 meters ² Line length for each transect was 25 meters for site total length of 75 meters										

Table G3 - Transect Coordinate Locations Reclaimed Pad 93-4H (Datum: UTM Zone 12, WGS 84)									
	Azimuth from	Transect Sta	arting Point	Transect Er					
Site	starting point (true N)	Northing (mN)	Easting (mE)	Northing (mN)	Easting (mE)	Length			
Transect 1	003°	4423402.835	725185.1642	4423428.837	725185.2514	25 meters			
Transect 2	091°	4423397.114	725194.5712	4423409.156	725214.8297	25 meters			
Transect 3	149°	4423390.854	725185.7748	4423372.939	725199.9044	25 meters			

Transect Photos and Transect Layout Plot



Figure E1 Transect 1 Reclaimed Pad 93-4H



Figure E3 Transect 3 Reclaimed Pad 93-4H



Figure E2 Transect 2 Reclaimed Pad 93-4H



Figure E4 Pad 93-4H Transect Layout