

*Guide for Using the Hydrogeologic Classification System for Logging Water Well Boreholes by Thomas M. Hanna NGWA Press

CITY AND BOROUGH OF JUNEAU
DRILLING LOG NEW WELL 4

(Not currently used, constructed for future replacement of existing Well 4)

| | |
|--|---|
| Driller | Aquasource LLC. |
| Method of Construction | Air Rotary Drill |
| Type of Fluids Used for Drilling | None |
| Location of Well | 59° 18' 27.52" N, 134° 23' 43.95" W |
| Soils Log | See attached gradations for Test Well TW-4-15 and Material Description of materials encountered below |
| Depth of Casing | 80' Below Ground Surface |
| Height of Casing Above Ground | 4' Above Ground Surface |
| Depth and Type of Grouting | 25' Below Ground Surface, Bentonite Grout |
| Depth of Screens | 80' to 125' |
| Casing Diameter | 16" OD |
| Casing Material | ASTM A53 Steel Grade B |
| Depth of Perforations or Openings in Casing | None |
| Well Development Method | Air Lifting/Swabbing, Hydropuls While Pumping, Water Jetting While Pumping |
| Total Depth of Well | 130' (Includes 5' Blank Tail Pipe attached to bottom of well screen) |
| Depth to Static Water Level | Varies from 3' to 8' |
| Anticipated Use of the Well | Public water supply, intermittent use |
| Maximum Well Yield | 6,840 gpm |
| Drawdown Test Results | 24-Hour Pump Test at 1,600 gpm, Drawdown=14.0' |
| Pump | No Pump Installed |

| Depth from Ground Surface | Material Description |
|----------------------------------|---|
| 0 to 3' | Previously Constructed Building Pad |
| 3' to 30' | Well graded sands and gravels with larger boulders, water encountered at about 6' |
| 30' to 80' | Sandy Gravel interspersed with layers of silts and clays |
| 80' to 90' | Coarse Sand, water saturation |
| 90' to 103' | Sandy Gravel, water saturation |
| 103' to 113' | Sand, water saturation |
| 113' to 135' | Sandy Gravel, water saturation |

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Carson Dorn Inc.



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ENGINEERS GEOLOGISTS SURVEYORS

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Sieve Analysis ASTM D422

Client Carson Dorn

Project # 151107

Project Last Chance Basin 2014 Source Improvements

Received Date 3/25/2015

Location Juneau, AK

Reported Date 3/26/2015

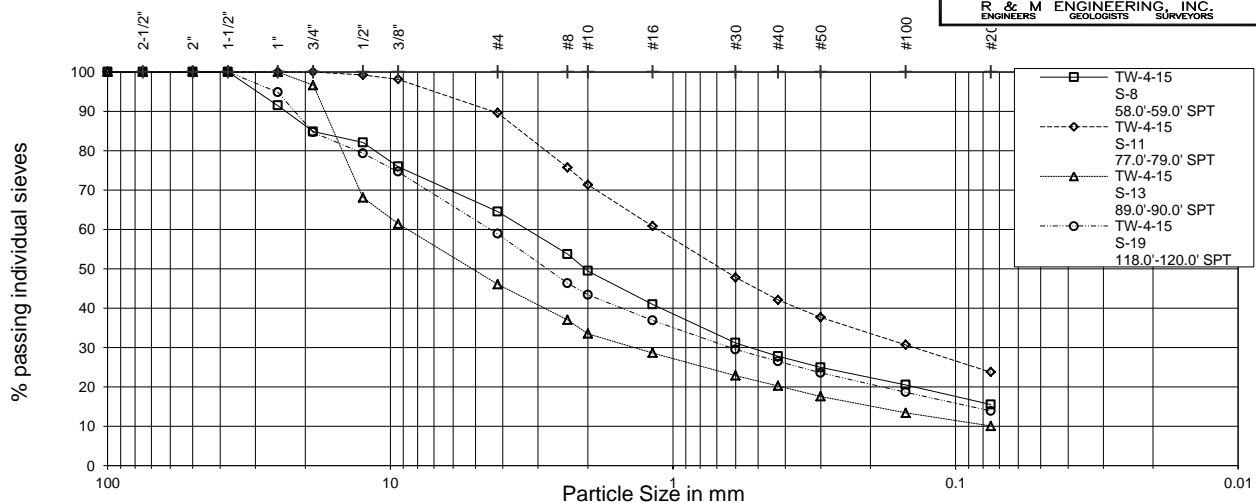
Material/Source TW-4-15 Borehole

Tested by/date WMS 3/26/2015

Sampled by/date Jeff Weiss 3/24-25/2015

| | | | | | | | | |
|------------|--|----------------|---|----------------|---|----------------|---|----------|
| Moisture | 11.6% | | 12.1% | | 7.8% | | 10.2% | |
| SIEVE SIZE | Percent passing | Required specs | Percent passing | Required specs | Percent passing | Required specs | Percent passing | Required |
| | TW-4-15 S-8 58.0'-59.0' SPT | | TW-4-15 S-11 77.0'-79.0' SPT | | TW-4-15 S-13 89.0'-90.0' SPT | | TW-4-15 S-19 118.0'-120.0' SPT | |
| 4 " | | | | | | | | |
| 3 " | | | | | | | | |
| 2 " | | | | | | | | |
| 1 1/2 " | 100 | | | | | | 100 | |
| 1 " | 91 | | | | 100 | | 95 | |
| 3/4 " | 85 | | 100 | | 97 | | 85 | |
| 1/2 " | 82 | | 99 | | 68 | | 79 | |
| 3/8 " | 76 | | 98 | | 61 | | 75 | |
| No 4 | 65 | | 90 | | 46 | | 59 | |
| No 8 | 54 | | 76 | | 37 | | 46 | |
| No 10 | 49 | | 71 | | 34 | | 43 | |
| No 16 | 41 | | 61 | | 29 | | 37 | |
| No 30 | 31 | | 48 | | 23 | | 29 | |
| No 40 | 28 | | 42 | | 20 | | 26 | |
| No 50 | 25 | | 38 | | 18 | | 24 | |
| No 100 | 20 | | 31 | | 13 | | 19 | |
| No 200 | 15.5 | | 23.7 | | 10.0 | | 13.8 | |

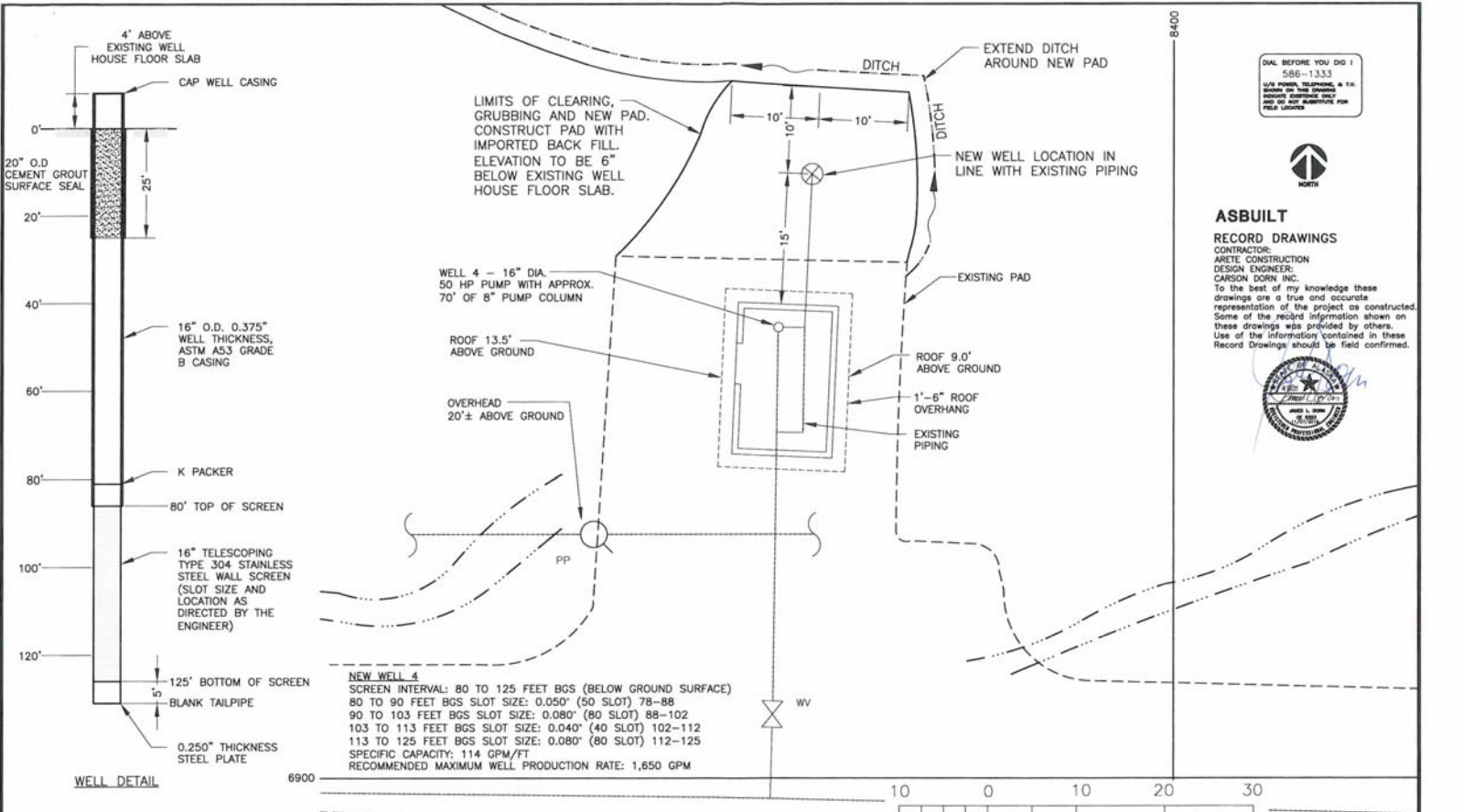
Grain Size Distribution Curve



Cobbles and Gravel

Sand

Silt and Clay



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 DIVISION OF THE STATE
 REPORTS CONTRACT ONLY
 AND DO NOT SUBSTITUTE FOR
 FIELD LOCATIONS



ASBUILT
RECORD DRAWINGS
 CONTRACTOR:
 ARETE CONSTRUCTION
 DESIGN ENGINEER:
 CARSON DORN INC.
 To the best of my knowledge these
 drawings are a true and accurate
 representation of the project as constructed.
 Some of the record information shown on
 these drawings was provided by others.
 Use of the information contained in these
 Record Drawings should be field confirmed.