RECEIVED
MAY 11 2018
GARFIELD COUNTY
COMMUNITY DEVELOPMENT

Garfield County

Community Development Department
108 8th Street, Suite 401
Glenwood Springs, CO 81601
(970) 945-8212
www.garfield-county.com

LAND USE CHANGE PERMIT APPLICATION FORM

TYPE OF APPLICATION	
☒ Administrative Review	☐ Development in 100-Year Floodplain
☐ Limited Impact Review	☐ Development in 100-Year Floodplain Variance
☐ Major Impact Review	☐ Code Text Amendment
☐ Amendments to an Approved LUCP ☐ LIR ☐ MIR ☐ SUP	☐ Rezoning ☐ Zone District ☐ PUD ☐ PUD Amendment
☐ Minor Temporary Housing Facility	☐ Administrative Interpretation
☐ Vacation of a County Road/Public ROW	☐ Appeal of Administrative Interpretation
☐ Location and Extent Review	☐ Areas and Activities of State Interest
☐ Comprehensive Plan Amendment	☐ Accommodation Pursuant to Fair Housing Act
☐ Pipeline Development	☐ Variance
☐ Time Extension (also check type of original application)	

INVOLVED PARTIES

Owner/Applicant

Name: CHRIS JANUSZ Phone: (970) 948-2011

Mailing Address: 3644 HWY 82

City: GLENWOOD SPRINGS State: CO Zip Code: 81601

E-mail: CMJANUSZ123@GMAIL.COM

Representative (Authorization Required)

Name: ERIC JANUSZ Phone: (970) 948-4452

Mailing Address: 3644 HWY 82

City: GLENWOOD SPRINGS State: CO Zip Code: 81601

E-mail:

PROJECT NAME AND LOCATION

Project Name: Janusz ADU

Assessor's Parcel Number: ____ - ____ - ____ - ____

Physical/Street Address:

Legal Description:

Zone District: RU Property Size (acres): .73

PROJECT DESCRIPTION

Existing Use:

SINGLE FAMILY MOBIL HOME SINCE 1964

Proposed Use (From Use Table 3-403): SINGLE FAMILY HOME + ADU + GARAGE

Description of Project: TRAILER TO BE MOVED 5-7-18. EXCAVATION TO BEGIN ON 5-9-18 BUILD FULL CELLER + 28'X56', 2 CAR GARAGE ON ONE END, A.D.U. ON OTHER END. MODULAR HOUSE ON TOP.

REQUEST FOR WAIVERS

Submission Requirements

☐ The Applicant requesting a Waiver of Submission Requirements per Section 4-202. List:

Section: _____ Section: _____

Section: _____ Section: _____

Waiver of Standards

☐ The Applicant is requesting a Waiver of Standards per Section 4-118. List:

Section: _____ Section: _____

Section: _____ Section: _____

I have read the statements above and have provided the required attached information which is correct and accurate to the best of my knowledge.

Chris Lamy

Signature of Property Owner

5-16-18

Date

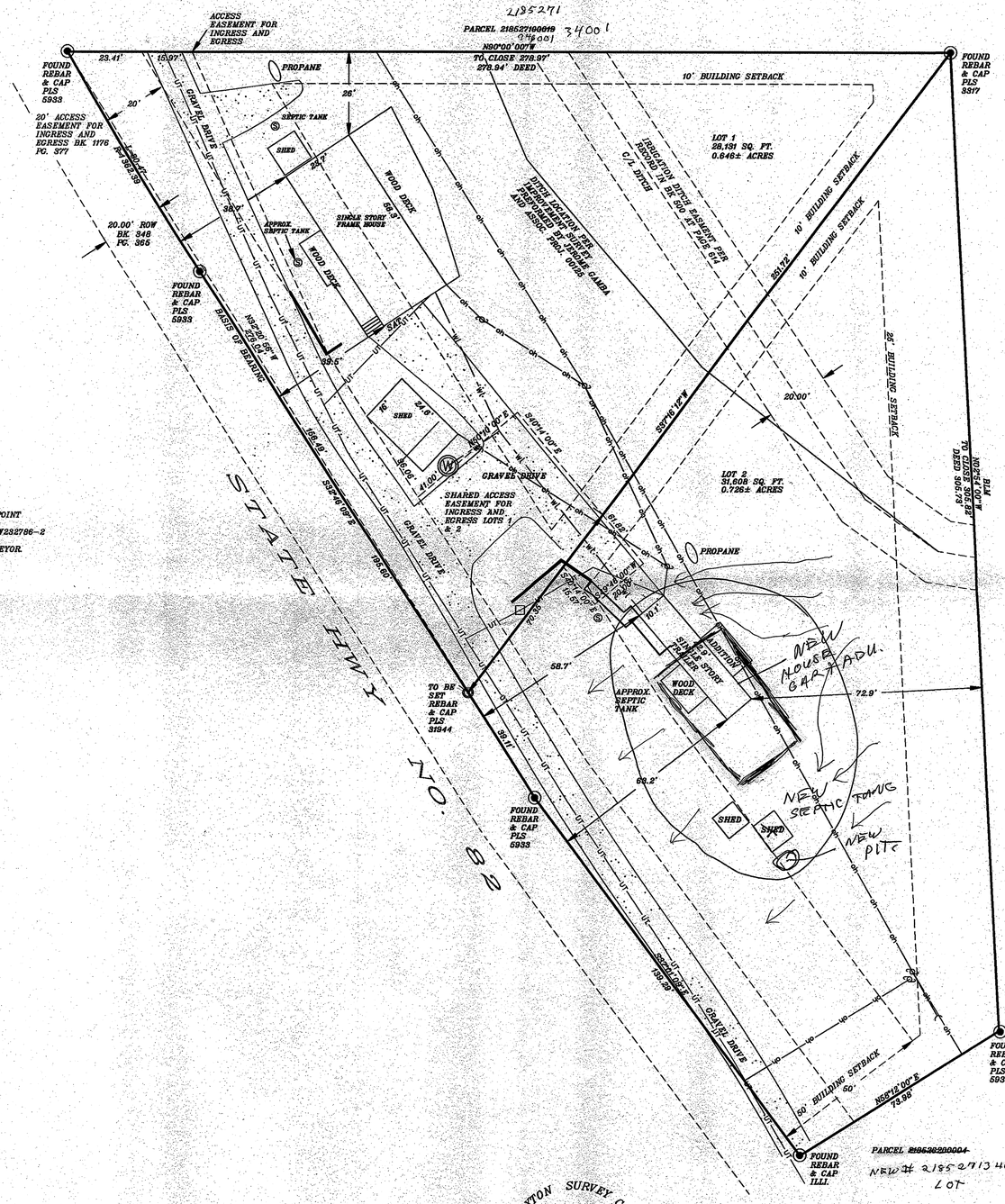
OFFICIAL USE ONLY

File Number: GAPA-8626

Fee Paid: $ 250.00

JANUSZ EXEMPTION PLAT

A PARCEL OF LAND SITUATED IN, SEC. 27, T. 6 S., R. 89 W. OF THE 6TH P.M., COUNTY OF GARFIELD, STATE OF COLORADO



GRAPHIC SCALE

20 5 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NORTH

NOTES & LEGENDS:

- EXISTING WELL TO BE SHARED BY LOTS 1 & 2.
- ADDITIONAL INFORMATION JEROME CAMBA & ASSOC. PROJ. 00125.
- OWNER CHRISTOPHER M. & ASTRID B. JANUSZ.
- ADDITIONAL INFORMATION DEPT. OF HWY. S 0130(7) AND S 0130(8)
- BUILDING SETBACKS PER GARFIELD COUNTY ZONE R,O,TD
- BASIS OF BEARING IS THE NW CORNER AND THE SOUTHERLY ANGLE POINT OF THE WEST LINE OF SAID PROPERTY BOTH PLS 5933 AS SHOWN.
- INFORMATION AND EASEMENTS SHOWN ARE FROM TITLE POLICY NO. GW232766-2 ISSUED BY LAND TITLE GUARANTEE.
- THIS DOES NOT REPRESENT A TITLE SEARCH BY THIS FIRM OR SURVEYOR.

◉ – INDICATES FOUND MONUMENT AS DESCRIBED.
–oh– – INDICATES OVERHEAD UTILITY.
○ – INDICATES FOUND UTILITY POLE.
Ⓦ – INDICATES WELL
Ⓢ – INDICATES SEWER.

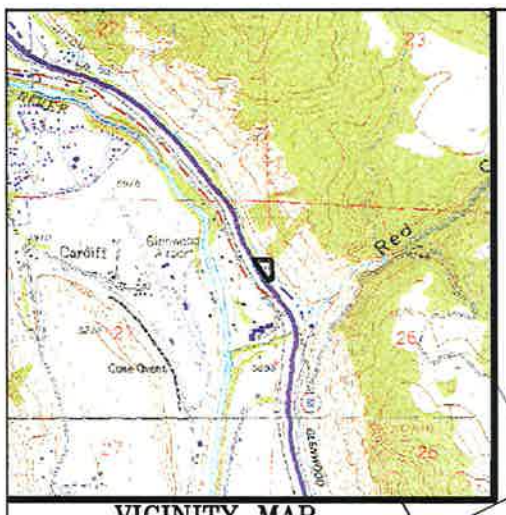
THE SEXTON SURVEY COMPANY
128 WEST 3RD STREET
RIFLE CO. 81650
625-3711 945-4700

JOB NO.:	09010
DWG:	09010 1
DATE:	5/28/09
REV.:	
DWG. BY:	KJS
CK. BY:	BAS

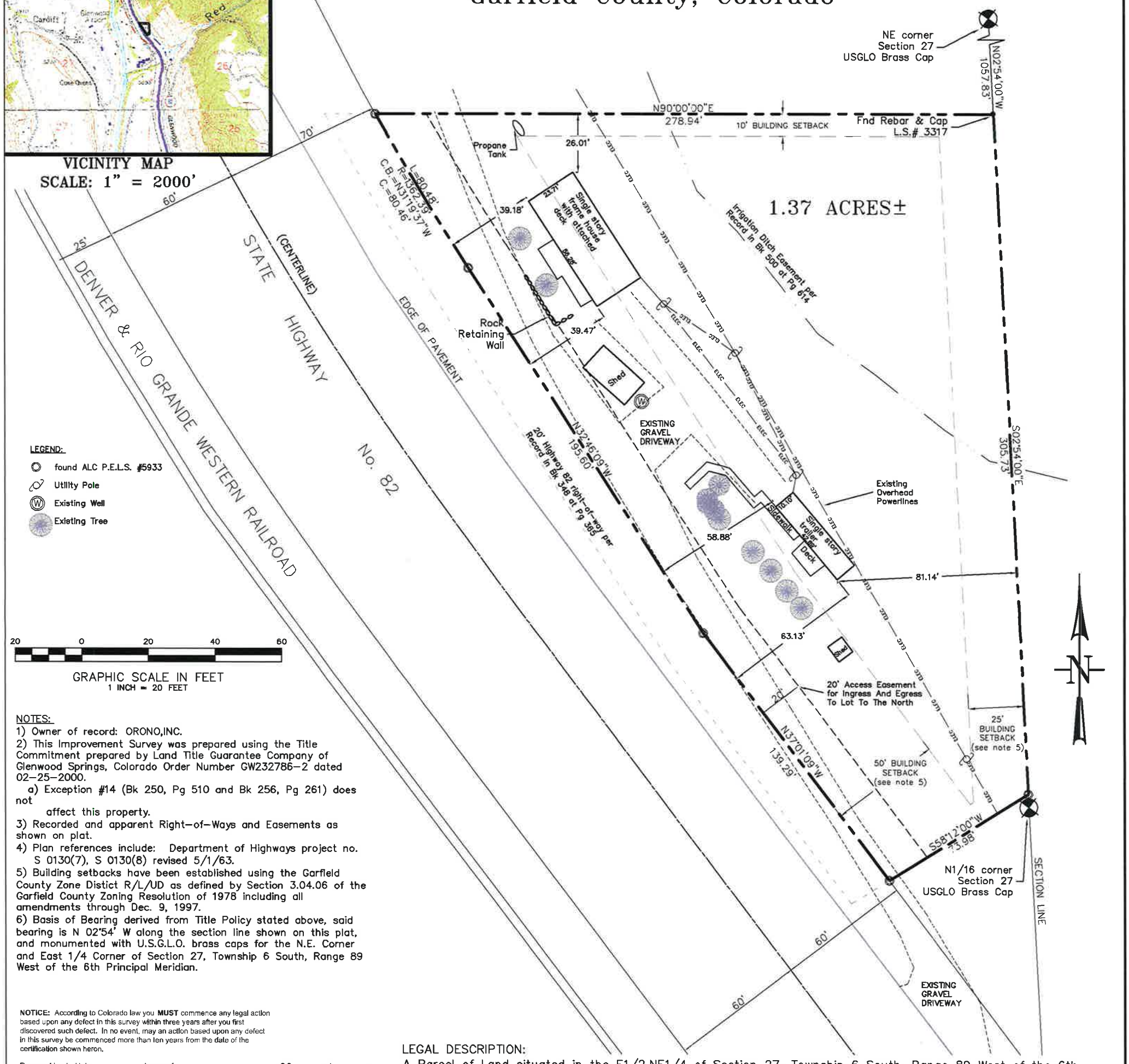
JANUSZ EXEMPTION PLAT
A PARCEL OF LAND SITUATED IN,
SEC. 27, T. 6 S., R. 89 W. OF THE 6TH P.M.,
COUNTY OF GARFIELD, STATE OF COLORADO

Improvement Survey

3642 Highway 82, Section 27, Township 6 South, Range 89 West of the Sixth Principal Meridian. Garfield County, Colorado



VICINITY MAP
SCALE: 1" = 2000'



LEGEND:

- found ALC P.E.L.S. #5933
- Utility Pole
- Existing Well
- Existing Tree

20 0 20 40 60

GRAPHIC SCALE IN FEET
1 INCH = 20 FEET

NOTES:

1) Owner of record: ORONO,INC.
2) This Improvement Survey was prepared using the Title Commitment prepared by Land Title Guarantee Company of Glenwood Springs, Colorado Order Number GW232786-2 dated 02-25-2000.
   a) Exception #14 (Bk 250, Pg 510 and Bk 256, Pg 261) does not affect this property.
3) Recorded and apparent Right-of-Ways and Easements as shown on plat.
4) Plan references include: Department of Highways project no. S 0130(7), S 0130(8) revised 5/1/63.
5) Building setbacks have been established using the Garfield County Zone Distict R/L/UD as defined by Section 3.04.06 of the Garfield County Zoning Resolution of 1978 including all amendments through Dec. 9, 1997.
6) Basis of Bearing derived from Title Policy stated above, said bearing is N 02°54' W along the section line shown on this plat, and monumented with U.S.G.L.O. brass caps for the N.E. Corner and East 1/4 Corner of Section 27, Township 6 South, Range 89 West of the 6th Principal Meridian.

NOTICE: According to Colorado law you **MUST** commence any legal action based upon any defect in this survey within three years after you first discovered such defect. In no event, may an action based upon any defect in this survey be commenced more than ten years from the date of the certification shown heron.

Deposited this _____ day of _____, 20____ at _____, ____M, in Book _____ of the County Surveyor's land survey plats/ right-of-way surveys at page _____, reception number _____. This land survey plat complies with Section 38-51-102, Colorado Revised Statutes.

_____
Garfield County Surveyor

SURVEYOR'S CERTIFICATE:

I, Jerome F. Gamba, a registered professional engineer and land surveyor in the state of Colorado, hereby certify that this plat is a true representation of an Improvement Survey conducted by me or under my direct supervision as established by Section 38-51-102(9) of the Colorado Revised Statues in March, 2000.

LEGAL DESCRIPTION:

A Parcel of Land situated in the E1/2,NE1/4 of Section 27, Township 6 South, Range 89 West of the 6th P.M. more particularly described as follows:

Beginning at a point on the east line of said Section 27, whence the Northeast corner of said Section 27 bears N 02°54'00" W a distance of 1057.83 feet;
Thence S 02°54'00" E, 305.73 feet along said east line;
Thence S 58°12'00" W, 73.98 feet to a point on the easterly Right-Of-Way of Highway No. 82;
Thence along said easterly Highway 82 Right-Of-Way the following 3 courses:
1)N 37°01'09" W, 139.29 feet;
2)N 32°46'09" W, 195.60 feet;
3)Along the arc of curve to the right 80.48 feet, said curve having a radius of 1362.39 feet and a chord that bears N 31°19'37" W, 80.46 feet;
Thence N 90°00'00" E, 278.94 feet to the Point of Beginning, containing 1.37 acres more or less.

Jerome F. Gamba P.E. & L.S. 5933

IMPROVEMENT SURVEY			
SCALE: 1" = 30'	DATE: MARCH 13, 2000	SHEET 1 OF 1	
DRAWN BY: RGD	CHKD BY: NJB	APPD BY: JFG	PLAN NO. IMPROVEMENT

ORONO, INC.
c/o Hal Tudor
P.O. Box 270988
Louisville, CO 80027-0988

JEROME GAMBA & ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
POST OFFICE BOX 1458
113 NINTH STREET - SUITE 214
GLENWOOD SPRINGS, COLORADO 81602 (970) 945-2550

SHEET NO. 1

PROJECT: 00125

Garfield County

Community Development Department

May 24, 2018

Chris Janusz
3644 Highway 82
Glenwood Springs, CO 81601

RE: Completeness Review Janusz ADU – GAPA-05-18-8646

Dear Mr. Janusz

Thank you for your application for an Accessory Dwelling Unit located at 3644 Highway 82, Glenwood Springs CO 81601. Our completeness review included input from the County Attorney's Office and has identified several items that need to be addressed or clarified prior to a determination of technical completeness. Please respond to the following items:

Mineral Ownership Issues:

1. Please explain how the mineral research was completed and if the supplied records are the most up-to-date. The Quitclaim Mineral Deed shows half of the minerals are owned by Astrid Janusz Minerals LLC. An address is needed for that company if available.
3189 "C" VIA BUENA VISTA LAGUNA WOODS CA 92637

Site Plan:

2. The Site Plan from 2009 shows a shed in the front yard setback. Please indicate whether or not that shed has been moved or provide a demonstration that the shed complies with required building setbacks. SHED WILL BE REMOVED

Grading and Drainage Plan:

3. Staff understands that a Grading and Drainage plan is being required as part of the Building Permit for the single-family residence. If this is the case, a waiver request may be applied for regarding this submittal requirement. Please indicate in the waiver request that the standard is being addressed as part of the building permit process. WAIVER

Impact Analysis:

4. Please respond to the Impact Analysis Section in 4-203 (G) of the Land Use and Development Code.

Water Plan:

5. Please provide a statement detailing what the water supply plan is for the ADU. The well sharing agreement indicates that only 2-single-family dwelling units may use the well.

6. Please provide the current well permit for the property as well as any application for a new well permit that has been submitted to the Division of Water Resources.

7. Included in the application is an application for a Water Allotment Contract from the Basalt Water Conservancy District, but it is illegible. Please provide a legible version.

8. Please provide a draft copy of the updated well-sharing agreement indicating how the well will be shared between the two lots with the addition of the ADU. Please note that the updated well-sharing agreement will be required to be signed-off on by the adjoining property owner.

9. A water quality test that meets Land Use and Development Code Standards in 4-203-M1b(5)(c) is required as part of the initial submittal. The applicant may request that the water quality test be completed as a Condition of Approval, however this needs to be submitted as part of the application. Staff also recommends that the applicant remove the copy of the check from the application as any submitted information submitted to this department is available to the public.

10. A 4-hour pump test that meets Section 4-203-M1b(5)(a) is required as part of the initial submittal. The applicant may request that the water quantity test be completed as a Condition of Approval, however this needs to be submitted as part of the application..

Article 7 Standards:

11. Please respond to standards fully described in Article 7: Division 1-3 of the Land Use and Development Code.

Access:

12. A traffic study is a required submittal item. Please indicate the estimated Average Daily Trips (ADT) on the road from Highway 82 to the proposed ADU.

13. Based on the traffic study, please provide a demonstration of whether or not the access road from Highway 82 to the proposed ADU meet the standards in Table 7-107 of the Land Use and Development Code. If the road does not meet those standards you may apply for a Waiver pursuant to the attached policy.

14. The application provided a letter from Dan Roussin of CDOT for the Subdivision Exemption in 2008. While not required staff recommends the applicant contact CDOT to discuss the application.

15. The access road appears to cross the property to the southeast. Please provide an access easement for that portion of the road.

Landscape Plan

16. It appears based on the submittal that a Landscape Plan is not required, based on ADU's being exempt from Landscape Standards. Please provide a waiver request for this submittal requirement. WAIVER

Development & Improvements Agreement:

17. Based on the scope of the application, it does not appear to require a Development or Improvement Agreement. Please supply a waiver request for both of those submittal requirements. WAIVER

Wastewater Management Plan:

18. It appears, that the new OWTS is designed for 4 bedrooms. Please provide a statement that the ADU is included in this system.

Electronic Copies:

19. The electronic copy does not include all the information included in the hard copies. Please provide an updated electronic copy that includes all submittals.

Once the above topics are addressed, we can finalize our completeness review and schedule a date for the Director's Decision. Please note that the Garfield County Land Use and Development Code requires that the technical completeness issues be resolved within 60-days of the date of this letter. If not resolved in that timeframe, the application will be deemed withdrawn, unless a request for extension is submitted and approved.

Please feel free to call or request a follow-up meeting with staff to address any questions you may have regarding the above items. You may reach me at pwaller@garfield-county.com or 970-945-1377 ext. 1580.

Sincerely,

Patrick Waller
Senior Planner

Document must be filed electronically.
Paper documents are not accepted.
Fees & forms are subject to change.
For more information or to print copies
of filed documents, visit www.sos.state.co.us.

E-Filed

Colorado Secretary of State
Date and Time: 09/24/2014 03:24 PM
ID Number: 20141584722

Document number: 20141584722
Amount Paid: $1.00

ABOVE SPACE FOR OFFICE USE ONLY

Articles of Organization

filed pursuant to § 7-80-203 and § 7-80-204 of the Colorado Revised Statutes (C.R.S.)

1. The domestic entity name of the limited liability company is

Astrid Minerals, LLC

(The name of a limited liability company must contain the term or abbreviation "limited liability company", "ltd. liability company", "limited liability co.", "ltd. liability co.", "limited", "l.l.c.", "llc", or "ltd.". See §7-90-601, C.R.S.)

(Caution: The use of certain terms or abbreviations are restricted by law. Read instructions for more information.)

2. The principal office address of the limited liability company's initial principal office is

Street address

3644 Highway 82
(Street number and name)

Glenwood Springs | CO | 81601
(City) | *(State)* | *(ZIP/Postal Code)*

(Province – if applicable) | United States *(Country)*

Mailing address
(leave blank if same as street address)

(Street number and name or Post Office Box information)

(City) | *(State)* | *(ZIP/Postal Code)*

(Province – if applicable) | *(Country)*

3. The registered agent name and registered agent address of the limited liability company's initial registered agent are

Name
(if an individual)

Janusz | Christopher | M. |
(Last) | *(First)* | *(Middle)* | *(Suffix)*

or

(if an entity)

(Caution: Do not provide both an individual and an entity name.)

Street address

3644 Highway 82
(Street number and name)

Glenwood Springs | CO | 81601
(City) | *(State)* | *(ZIP Code)*

Mailing address
(leave blank if same as street address)

(Street number and name or Post Office Box information)

_____ CO _____.
(City) (State) (ZIP Code)

(The following statement is adopted by marking the box.)

☑ The person appointed as registered agent has consented to being so appointed.

4. The true name and mailing address of the person forming the limited liability company are

Name
(if an individual) Janusz Christopher M. _____
(Last) (First) (Middle) (Suffix)

or

(if an entity) _____

(Caution: Do not provide both an individual and an entity name.)

Mailing address 3644 Highway 82
(Street number and name or Post Office Box information)

_____

Glenwood Springs CO 81601
(City) (State) (ZIP/Postal Code)

_____ United States.
(Province – if applicable) (Country)

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ The limited liability company has one or more additional persons forming the limited liability company and the name and mailing address of each such person are stated in an attachment.

5. The management of the limited liability company is vested in
(Mark the applicable box.)

☐ one or more managers.

or

☑ the members.

6. *(The following statement is adopted by marking the box.)*

☑ There is at least one member of the limited liability company.

7. *(If the following statement applies, adopt the statement by marking the box and include an attachment.)*

☐ This document contains additional information as provided by law.

8. *(Caution: Leave blank if the document does not have a delayed effective date. Stating a delayed effective date has significant legal consequences. Read instructions before entering a date.)*

(If the following statement applies, adopt the statement by entering a date and, if applicable, time using the required format.)

The delayed effective date and, if applicable, time of this document is/are _____.
(mm/dd/yyyy hour:minute am/pm)

Notice:
Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is named in the document as one who has caused it to be delivered.

9. The true name and mailing address of the individual causing the document to be delivered for filing are

Barker	Patrick	L.	
(Last)	*(First)*	*(Middle)*	*(Suffix)*

201 14th Street, Suite 200
(Street number and name or Post Office Box information)

Karp Neu Hanlon P.C.

Glenwood Springs	CO	81601
(City)	*(State)*	*(ZIP/Postal Code)*

	United States .
(Province – if applicable)	*(Country)*

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ This document contains the true name and mailing address of one or more additional individuals causing the document to be delivered for filing.

Disclaimer:
This form/cover sheet, and any related instructions, are not intended to provide legal, business or tax advice, and are furnished without representation or warranty. While this form/cover sheet is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form/cover sheet. Questions should be addressed to the user's legal, business or tax advisor(s).

Document must be filed electronically.
Paper documents are not accepted.
Fees & forms are subject to change.
For more information or to print copies
of filed documents, visit www.sos.state.co.us.

E-Filed

Colorado Secretary of State
Date and Time: 10/14/2014 08:42 AM
ID Number: 20141584722

Document number: 20141624306
Amount Paid: $25.00

ABOVE SPACE FOR OFFICE USE ONLY

Articles of Amendment

filed pursuant to §7-90-301, et seq. and §7-80-209 of the Colorado Revised Statutes (C.R.S.)

ID number: 20141584722

1. Entity name: Astrid Minerals, LLC
(if changing the name of the limited liability company, indicate name before the name change)

2. New Entity name:
(if applicable) Astrid Janusz Minerals, LLC

3. Use of Restricted Words *(if any of these terms are contained in an entity name, true name of an entity, trade name or trademark stated in this document, mark the applicable box)*:
☐ "bank" or "trust" or any derivative thereof
☐ "credit union" ☐ "savings and loan"
☐ "insurance", "casualty", "mutual", or "surety"

4. Other amendments, if any, are attached.

5. If the limited liability company's period of duration as amended is less than perpetual, state the date on which the period of duration expires: _____
(mm/dd/yyyy)

or

If the limited liability company's period of duration as amended is perpetual, mark this box: ☐

6. *(Optional)* Delayed effective date: _____
(mm/dd/yyyy)

Notice:
Causing this document to be delivered to the secretary of state for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the secretary of state, whether or not such individual is named in the document as one who has caused it to be delivered.

7. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing:

Barker	Patrick	L.	
(Last)	*(First)*	*(Middle)*	*(Suffix)*

201 14th Street

Suite 200 *(Street name and number or Post Office Box information)*

Glenwood Springs CO 81601

(City) *(State)* *(Postal/Zip Code)*

United States

(Province if applicable) *(Country if not US)*

(The document need not state the true name and address of more than one individual. However, if you wish to state the name and address of any additional individuals causing the document to be delivered for filing, mark this box ☐ *and include an attachment stating the name and address of such individuals.)*

Disclaimer:
This form, and any related instructions, are not intended to provide legal, business or tax advice, and are offered as a public service without representation or warranty. While this form is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form. Questions should be addressed to the user's attorney.

H-P≈KUMAR
Geotechnical Engineering | Engineering Geology
Materials Testing | Environmental

5020 County Road 154
Glenwood Springs, CO 81601
Phone: (970) 945-7988
Fax: (970) 945-8454
Email: hpkglenwood@kumarusa.com

Office Locations: Denver (HQ), Parker, Colorado Springs, Fort Collins, Glenwood Springs, Summit County, Colorado

April 16, 2018

Chris Janusz
3644 Highway 82
Glenwood Springs, Colorado
Cmjanusz123@gmail.com

Project No. 18-7-240

Subject: Subsoil Study for Foundation Design, Proposed Residence, Lot 2, Janusz Exemption Plat, 3644 Highway 82, Garfield County, Colorado

Dear Mr. Janusz:

As requested, H-P/Kumar performed a subsoil study for design of foundations at the subject site. The study was conducted in accordance with our agreement for geotechnical engineering services to Chris Janusz dated April 3, 2018. The data obtained and our recommendations based on the proposed construction and subsurface conditions encountered are presented in this report. A geologic hazards assessment of the subject site is beyond the scope of this report.

Proposed Construction: An existing mobile home on the lot will be removed and a new residence constructed. The proposed residence will be a modular home over a garden level basement located on the site as shown on Figure 1. Ground floors will be slab-on-grade. Cut depths are expected to range between about 4 to 6 feet. Foundation loadings for this type of construction are assumed to be relatively light and typical of the proposed type of construction.

If building conditions or foundation loadings are significantly different from those described above, we should be notified to re-evaluate the recommendations presented in this report.

Site Conditions: There are currently multiple sheds and a mobile home on the lot. The building site is relatively flat with the terrain sharply steepening further to the east down to the driveway. There is minor grading including cut and fill leveling of the proposed building site. Vegetation consists of grass, sagebrush, scrub oak, and scattered conifers with landscape.

Subsurface Conditions: The subsurface conditions at the site were evaluated by excavating two exploratory pits at the approximate locations shown on Figure 1. The pits were dug by the client prior to our arrival on the site. The logs of the pits are presented on Figure 2. The subsoils encountered, below about 1 foot of topsoil, consist of silty sand and gravel with cobbles and boulders that extended down to the pit depths of 7½ and 5½ feet. Around 1 foot of older man-placed fill was encountered in Pit 2 below the topsoil. Results of gradation analyses performed on samples of silty sand and gravel (minus 3-inch fraction) obtained from the site are presented on Figure 3. The laboratory testing is summarized in Table 1. No free water was observed in the pits at the time of excavation and the soils were slightly moist.

Foundation Recommendations: Considering the subsoil conditions encountered in the exploratory pits and the nature of the proposed construction, we believe spread footings placed on the undisturbed natural soil designed for an allowable bearing pressure of 1,500 psf can be used for support of the proposed residence with a risk of settlement. The risk of settlement is if the bearing soils were to become wetted and precautions should be taken to prevent wetting.

Footings should be a minimum width of 18 inches for continuous walls and 2 feet for columns. All topsoil, existing fill, and all loose disturbed soils encountered at the foundation bearing level within the excavation should be removed and the footing bearing level extended down to the undisturbed natural soils. The subgrade should then be moistened and compacted. Exterior footings should be provided with adequate cover above their bearing elevations for frost protection. Placement of footings at least 36 inches below the exterior grade is typically used in this area. Continuous foundation walls should be well reinforced top and bottom to span local anomalies such as by assuming an unsupported length of at least 12 feet. Foundation walls acting as retaining structures should also be designed to resist a lateral earth pressure based on an equivalent fluid unit weight of at least 50 pcf for the on-site soil, excluding debris, topsoil and oversized (plus 6 inch) rocks, as backfill.

Floor Slabs: The natural on-site soils, exclusive of topsoil, are suitable to support lightly loaded slab-on-grade construction. There could be some slab settlement if the subgrade becomes wetted. To reduce the effects of some differential movement, floor slabs should be separated

from all bearing walls and columns with expansion joints which allow unrestrained vertical movement. Floor slab control joints should be used to reduce damage due to shrinkage cracking. The requirements for joint spacing and slab reinforcement should be established by the designer based on experience and the intended slab use.

All fill materials for support of floor slabs should be compacted to at least 95% of maximum standard Proctor density at a moisture content near optimum. Required fill can consist of the on-site soils devoid of debris, topsoil and oversized rocks (plus 6-inch size).

Underdrain System: Although free water was not encountered during our exploration, it has been our experience in the area that local perched groundwater can develop during times of heavy precipitation or seasonal runoff. Frozen ground during spring runoff can also create a perched condition. We recommend below-grade construction, such as retaining walls and basement areas, be protected from wetting and hydrostatic pressure buildup by an underdrain system.

The drains should consist of drainpipe placed in the bottom of the wall backfill surrounded above the invert level with free-draining granular material. The drain should be placed at each level of excavation and at least 1 foot below lowest adjacent finish grade and sloped at a minimum 1% to a suitable gravity outlet. If rigid PVC drain pipe is used, which we recommend, a pipe slope of ½% can be used. Free-draining granular material used in the underdrain system should contain less than 2% passing the No. 200 sieve, less than 50% passing the No. 4 sieve and have a maximum size of 2 inches. The drain gravel backfill should be at least 1½ feet deep and be covered by filter fabric. An impervious membrane such as 20 or 30 mil PVC should be placed beneath the drain gravel in a trough shape and attached to the foundation wall with mastic to prevent wetting of the bearing soils.

Surface Drainage: Positive surface drainage is a very important aspect of the project to prevent wetting of the bearing soils. The following drainage precautions should be observed during construction and maintained at all times after the residence/ADU have been completed:

1) Inundation of the foundation excavations and underslab areas should be avoided during construction.

2) Exterior backfill should be adjusted to near optimum moisture and compacted to at least 95% of the maximum standard Proctor density in pavement and slab areas and to at least 90% of the maximum standard Proctor density in landscape areas. Free-draining wall backfill should be capped with filter fabric and about 2 feet of the on-site, finer graded soils to reduce surface water infiltration.

3) The ground surface surrounding the exterior of the building should be sloped to drain away from the foundation in all directions. We recommend a minimum slope of 12 inches in the first 10 feet in unpaved areas and a minimum slope of 3 inches in the first 10 feet in pavement and walkway areas. A swale will likely be needed uphill to direct surface runoff around the residence and ADU.

4) Roof downspouts and drains should discharge well beyond the limits of all backfill.

5) Landscaping which requires regular heavy irrigation should be located at least 10 feet from the building. Consideration should be given to the use of xeriscape to limit potential wetting of soils below the foundation caused by irrigation.

Limitations: This study has been conducted in accordance with generally accepted geotechnical engineering principles and practices in this area at this time. We make no warranty either express or implied. The conclusions and recommendations submitted in this report are based upon the data obtained from the exploratory pits excavated at the locations indicated on Figure 1 and to the depths shown on Figure 2, the proposed type of construction, and our experience in the area. Our services do not include determining the presence, prevention or possibility of mold or other biological contaminants (MOBC) developing in the future. If the client is concerned about MOBC, then a professional in this special field of practice should be consulted. Our findings include interpolation and extrapolation of the subsurface conditions identified at the exploratory pits and variations in the subsurface conditions may not become evident until excavation is performed. If conditions encountered during construction appear different from those described in this report, we should be notified at once so re-evaluation of the recommendations may be made.

This report has been prepared for the exclusive use by our client for design purposes. We are not responsible for technical interpretations by others of our information. As the project evolves, we should provide continued consultation and field services during construction to review and monitor the implementation of our recommendations, and to verify that the recommendations have been appropriately interpreted. Significant design changes may require additional analysis or modifications to the recommendations presented herein. We recommend on-site observation of excavations and foundation bearing strata and testing of structural fill by a representative of the geotechnical engineer.

If you have any questions or if we may be of further assistance, please let us know.

Respectfully Submitted,

H-P≋KUMAR

Robert L. Duran, E. I.

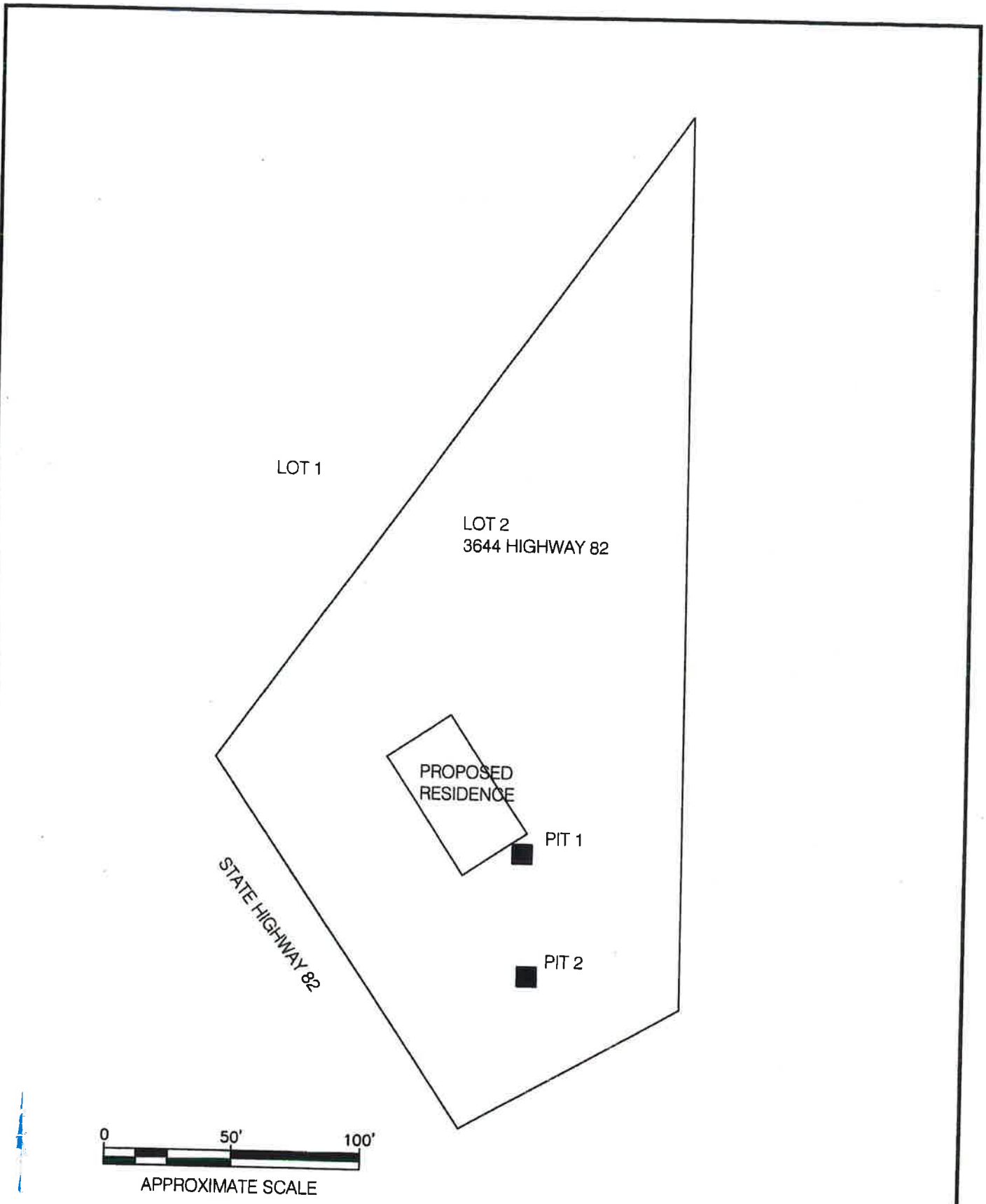
Reviewed by:

David A. Young, P.E.

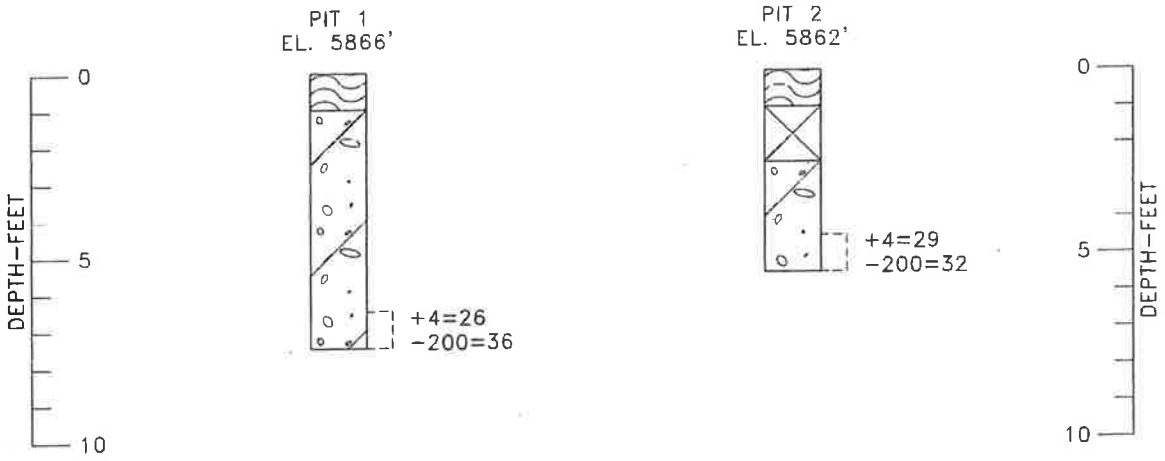
RLD/kac

attachments Figure 1 – Location of Exploratory Pits
Figure 2 – Logs of Exploratory Pits
Figure 3 – Gradation Test Results
Table 1 – Summary of Laboratory Test Results

cc: Kurtz & Associates – Brian Kurtz (kurtzengineer@yahoo.com)



18-7-240	H-P KUMAR Geotechnical Engineering | Engineering Geology Materials Testing | Environmental	LOCATION OF EXPLORATORY PITS	Figure 1



LEGEND

TOPSOIL; SAND AND SILT, SCATTERED GRAVEL, SLIGHTLY MOIST, DARK REDDISH BROWN, SLIGHTLY ORGANIC.

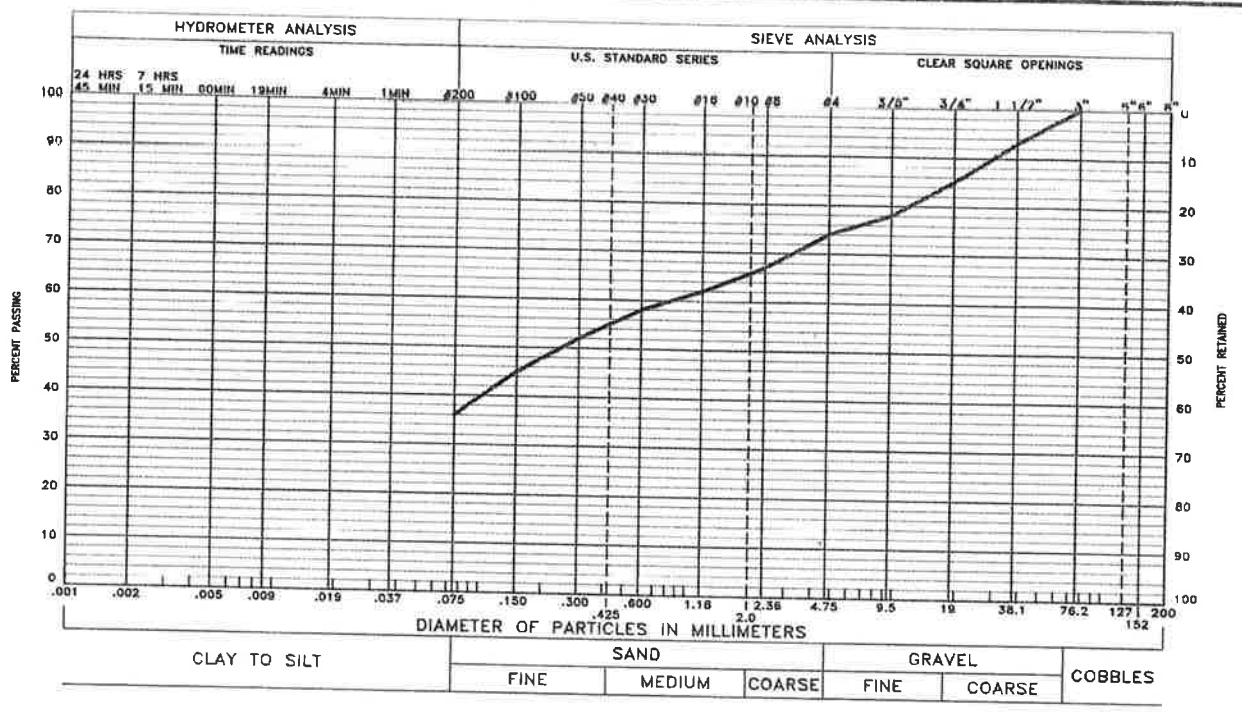
FILL; SAND AND GRAVEL, SILTY, SLIGHTLY MOIST, REDDISH-BROWN.

SAND AND GRAVEL (GM-SM); SILTY, SCATTERED COBBLES AND BOULDERS, MEDIUM DENSE, SLIGHTLY MOIST, REDDISH-BROWN.

DISTURBED BULK SAMPLE.

NOTES

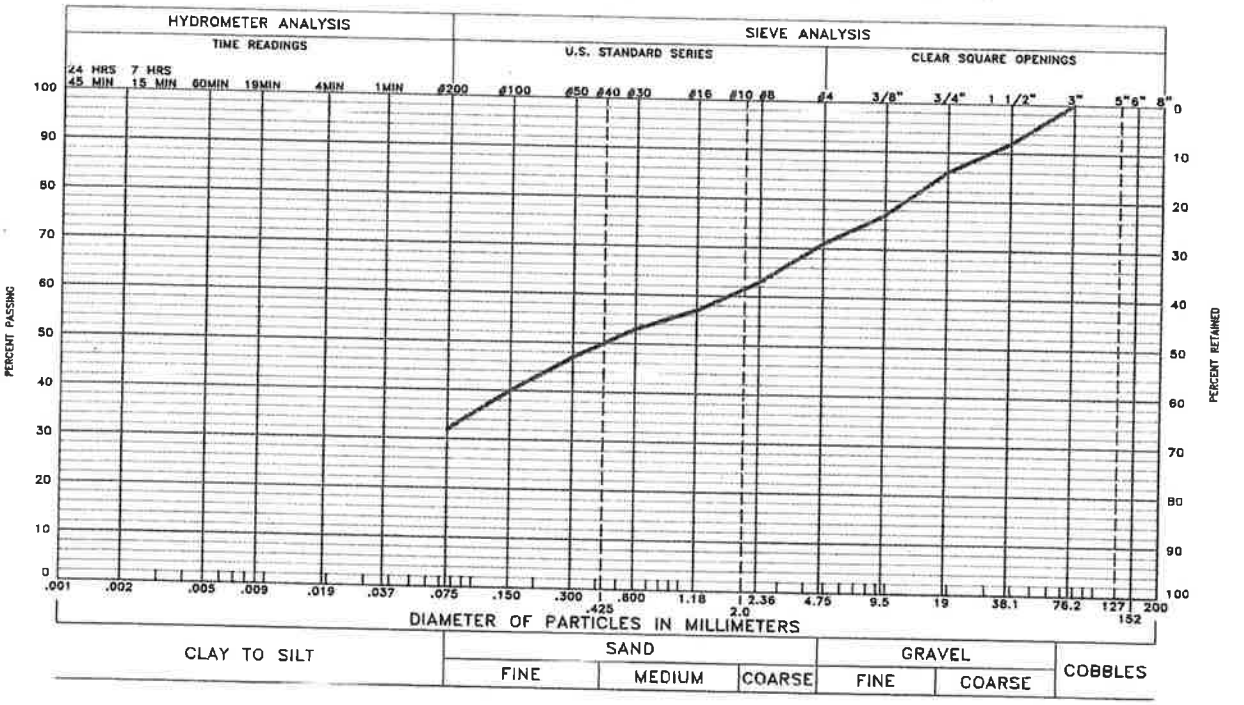
1. THE EXPLORATORY PITS WERE EXCAVATED WITH A BACKHOE ON APRIL 2, 2018.
2. THE LOCATIONS OF THE EXPLORATORY PITS WERE MEASURED APPROXIMATELY BY PACING FROM FEATURES SHOWN ON THE SITE PLAN PROVIDED.
3. THE ELEVATIONS OF THE EXPLORATORY PITS WERE NOT MEASURED AND THE LOGS OF THE EXPLORATORY PITS ARE PLOTTED TO DEPTH.
4. THE EXPLORATORY PIT LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
5. THE LINES BETWEEN MATERIALS SHOWN ON THE EXPLORATORY PIT LOGS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIAL TYPES AND THE TRANSITIONS MAY BE GRADUAL.
6. GROUNDWATER WAS NOT ENCOUNTERED IN THE PITS AT THE TIME OF DRILLING. PITS WERE BACKFILLED SUBSEQUENT TO SAMPLING.
7. LABORATORY TEST RESULTS:
   +4 = PERCENTAGE RETAINED ON NO. 4 SIEVE (ASTM D 422);
   -200 = PERCENTAGE PASSING NO. 200 SIEVE (ASTM D 1140).



GRAVEL 26 % SAND 38 % SILT AND CLAY 36 %

LIQUID LIMIT PLASTICITY INDEX

SAMPLE OF: Silty Sand with Gravel FROM: Pit 1 @ 6.5'–7.5'



GRAVEL 29 % SAND 39 % SILT AND CLAY 32 %

LIQUID LIMIT PLASTICITY INDEX

SAMPLE OF: Silty Sand with Gravel FROM: Pit 2 @ 4.5'–5.5'

H-P≋KUMAR

TABLE 1
SUMMARY OF LABORATORY TEST RESULTS

Project No. 18-7-240

SAMPLE LOCATION		NATURAL MOISTURE CONTENT	NATURAL DRY DENSITY	GRADATION		PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		UNCONFINED COMPRESSIVE STRENGTH		SOIL TYPE
PIT	DEPTH (ft)	(%)	(pcf)	GRAVEL (%)	SAND (%)		LIQUID LIMIT (%)	PLASTIC INDEX (%)	(psf)		
1	6 ½-7 ½			26	38	36					Silty Sand with Gravel
2	4 ½-5 ½			29	39	32					Silty Sand with Gravel

HP Geotech
HEPWORTH-PAWLAK GEOTECHNICAL

Hepworth-Pawlak Geotechnical, Inc.
5020 County Road 154
Glenwood Springs, Colorado 81601
Phone: 970-945-7988

Fax: 970-945-8454
email: hpgeo@hpgeotech.com

February 9, 2009

Chris Janusz
3642 Highway 82
Glenwood Springs, Colorado 81601

Job No. 109 016A

Subject: Preliminary Geologic Site Assessment, Proposed 2 Lot Subdivision, 3642 and 3644 Highway 82, Garfield County, Colorado

Dear Mr. Janusz:

This report presents the results of a preliminary geologic site assessment for the proposed 2 lot subdivision located at 3642 and 3644 Highway 82, Garfield County, Colorado. The purpose of the study was to evaluate the geologic conditions and their potential impacts on the project. The study was conducted in accordance with our agreement for professional services to Chris Janusz, dated January 26, 2009.

A field reconnaissance of the project site was made on February 2, 2009 to observe the geology and potential hazards at the site. In addition, we have reviewed previous studies in the area, published regional geologic studies and looked at aerial photographs. Based on this information, an assessment of the potential influence of the geology on the proposed development was made. This report summarizes our findings and presents our conclusions and recommendations.

Proposed Development: The proposed development consists of splitting the 1.37 acre, triangle shaped lot into two roughly equal size lots and replacing the existing trailer on the south lot (3644 Highway 82) with a single family residence.

At this time, no new development is planned for the home on the north lot, and plans for the single family residence on the south lot have not been developed. When building and grading plans have been developed for the site, we should be notified for additional geologic conditions assessment and a geotechnical evaluation.

Site Conditions: The project site is located in the northern part of the Roaring Fork River valley about 2 miles south of Glenwood Springs along the uphill, eastern side of Highway 82. The overall property is roughly triangular in shape with side dimensions of about 279 feet and 306 feet and 415 feet along Highway 82. The property abuts a single family residence to the north and a commercial development to the southeast. The steep hillside to the northeast is cut by relatively small, ephemeral drainages which slope down towards the project site and terminate at the Glenwood Ditch. The ditch is located between about 40 to 60 feet uphill of the existing structures. An 8-inch diameter PVC pipe has recently been buried in the bottom of the ditch for service to the adjacent properties. Currently, the ditch is about 12 feet wide and 4 feet deep. The property is located in the middle part of coalescing debris fans which originate about 300 feet upslope of the property. The property grade has been terraced to accommodate a trailer, modular residence and storage sheds which are accessed by a driveway from Highway 82 to the southwest. The overall slope across the development area is about 25 percent down to the southwest towards the Roaring Fork River, located about 1,700 feet southwest of the property. Above the ditch, the ground surface increases in steepness to about 50 percent. Vegetation on the property consists of grass and weeds, scattered small brush and several 10 to 20 foot tall pinon pines. Sandstone cobbles and boulders up to about 4 feet in size were observed on and surrounding the site. Most of the downhill properties on the alluvial fan have been developed with single family and commercial structures.

Regional Geologic Setting: The project site is located in the Carbondale collapse center of the Southern Rocky Mountains Region west of the Rio Grande rift and east of the Colorado Plateau. The Carbondale collapse center is the western of two regional evaporite collapse centers in western Colorado. It is an irregular-shaped, northwest trending region covering 460 square miles between the White River uplift and Piceance basin. As much as 4,000 feet of regional subsidence is believed to have occurred during the past 10 million years in the vicinity of Carbondale as a result of dissolution and flowage of evaporite from beneath the regions (Kirkham and Others, 2002). The Eagle Valley Formation is located stratigraphically below the Maroon Formation and crops out on the valley side west of the project site. Much of the evaporite related subsidence in the Carbondale collapse center appears to have occurred within the past 3 million years

which also corresponds to high incision rates along the Roaring Fork, Colorado and Eagle Rivers. This indicates that long-term subsidence rates have been very slow, between about 0.5 and 1.6 inches per 100 years. It is uncertain if regional evaporite subsidence is still occurring or if it is currently inactive. If still active, these regional deformations because of their very slow rates should not have a significant impact on the proposed development at the site.

Geologically young faults related to evaporite tectonics are present in the Carbondale collapse center but considering the nature of evaporite tectonics, these faults are not considered capable of generating large earthquakes. The closest geologically young faults that are less than about 15,000 years old and considered capable of generating large earthquakes are located in the Rio Grande rift to the east of the project site. The northern section of the Williams Fork Mountains fault zone Q50 is located about 50 miles to the northeast and the southern section of the Sawatch fault zone Q56b is located about 80 miles to the southeast. At these distances large earthquakes on these two geologically young fault zones should not produce strong ground shaking at the project site that is greater than the ground shaking shown on the U. S. Geological Survey 2002 National Seismic Hazards Maps (Frankel and Others, 2002).

Project Site Geology: The geology in the project area was observed on February 2, 2009. Our geologic interpretations also use regional geology maps by Soule and Stover (1985) and Kirkham and others (1995). The local bedrock is Maroon Formation consisting of moderate to shallow dipping, blocky red sandstone. These rocks were deposited in the central Colorado trough during the Ancestral Rocky Mountain orogeny about 300 million years ago. The regional bedding generally strikes to the north and dips to the east. Bedrock outcroppings directly northeast of the project site dip between 11 and 26 degrees down to the east, into the hillside. The Maroon is overlain by dense, black resistant alkali basalt in lava-flow layers several feet thick deposited between 8 and 23 million years ago. The closest basalt flows are located about 3,000 feet to the north of the project site.

Surficial Soil Deposits: The soil deposits in the project area are largely the result of erosion of red sandstone layers from bedrock outcroppings deposited as alluvial fans through a series of small drainages northeast of the project site. Several sandstone cobbles and boulders are visible on the surface. These fans appear active and could still be sites of infrequent rockfall and debris flows or floods associated with intense thunderstorms. A 6 to 8 foot incised drainage channel is located north of the property but appears to empty northwest of the site. The existing irrigation ditch would also appear to divert water and debris to the northwest around the project site and act as a catchment basin for rockfall.

Geologic Site Assessment: There are several conditions of a geologic nature that should be considered as project planning and design proceeds. The most significant are potential rockfall and debris flows and floods. Other geologic conditions are sinkhole potential, earthquake ground shaking and moisture sensitive foundation soils. Percolation testing performed in 1980 and 1984 for septic design reported percolation rates of 10 and 15 minutes per inch, respectively. A log of a domestic well drilled in 1962 reported rocky soils to a depth of 73 feet and groundwater level at 50 feet. The alluvial fan soils above the water level are considered to be collapsible when wetted. Shallow foundations are typically used in this area for lightly loaded structures, but recommendations for bearing on the moisture sensitive soils should be addressed with a site specific geotechnical study when the building plans have been developed. The potential risks and possible mitigations to reduce the risks associated with debris flows, rockfalls, sinkholes and earthquakes are discussed below.

Debris Flow and Flood Potential: The property is located in the middle part of coalescing alluvial fans that could be subject to sheetwash flows and floods during periods of snowmelt or heavy rainfall. There is a relatively high likelihood that future floods and flows will occur along hillside drainages but flows of the main drainage currently follow an incised drainage channel which passes northwest of the property. Smaller drainage channels are intercepted by the irrigation ditch which appears to carry water around the property to the northwest. In our opinion, there is a risk that debris flow material could breach the irrigation ditch during a large event and expose the project site

to significant building and property damage and possible harm to the building occupants. If this risk is not acceptable then mitigation to reduce the risk should be considered.

Rockfall Potential: The steep hillside cliffs located to the northeast of the project site are resistant beds of the Maroon Formation that are source areas for repeated falls of rocks of varying sizes. Although rockfall occurrences have been documented in the Glenwood Springs area, we are not aware of rockfall documentation on the project site. Several cobble and boulder size rock fragments on the property do indicate a potential rockfall hazard. In our opinion, the risk is moderate that a rockfall event could reach the project site and cause significant building and property damage and possible harm to the building occupants. If this risk is not acceptable then mitigation to reduce the risk should be considered. The existing irrigation ditch has a 4 foot wall and a 12 foot wide catchment area which will prevent some rocks from reaching the project site.

Sinkholes: Geologically young sinkholes are present in the western Colorado evaporite region mostly in areas where the Eagle Valley Formation and Eagle Valley Evaporite are shallow. The Eagle Valley Formation underlies the Maroon Formation in the project area. Evidence of sinkholes was not observed at the project site during our field reconnaissance or on aerial photographs reviewed. Although geologically active in the region, the likelihood that a sinkhole will develop during a reasonable exposure time at the site is considered to be low. The property owner should be advised of the sinkhole potential, since early detection of building distress or settlement of graded areas may help with timely remedial action which is important in reducing the cost of repairs should an undetected subsurface void start to develop into a sinkhole.

Earthquake Potential: Historic earthquakes at the project site have typically been moderately strong with magnitudes of M 5.5 and less and maximum Modified Mercalli Intensities of VI and less (Kirkham and Rogers, 1985). Modified Mercalli Intensity VI ground shaking should be expected during a reasonable exposure time for the site, but the probability of stronger ground shaking is low. Intensity VI ground shaking is felt by most people and causes general alarm, but results in negligible damage to structures of good design and construction.

Future buildings on the site should be designed to withstand moderately strong ground shaking with little or no damage and not to collapse under stronger ground shaking. For firm rock sites with shear wave velocities of 2,500 fps in the upper 100 feet the U. S. Geological Survey 2002 National Seismic Hazard Map indicates that a peak ground acceleration of 0.06g has a 10% exceedence probability for a 50 year exposure time and a peak ground acceleration of 0.23g has a 2% exceedence probability for a 50 year exposure time at the project site (Frankel and Others, 2002). This corresponds to a statistical recurrence time of about 500 years and 2,500 years, respectively. The soil profile at the building site is estimated as Class D, stiff soil site, as described in the 2006 International Building Code.

Radiation Potential: Regional studies by the Colorado Geological Survey indicate that the closest radioactive mineral occurrences to the project site are located along the Grand Hogback near New Castle about 14 miles to the northwest (Nelson-Moore and Others, 1978). Regional studies by the U. S. Geological Survey (Dubiel, 1993) for the U. S. Environmental Protection Agency (EPA) indicate that the project site is in a moderate radon gas potential zone. The 1993 EPA regional radon study considered data from: (1) indoor radon surveys, (2) aerial radioactivity surveys, (3) the general geology, (4) soil permeability estimates, and (5) regional architectural practices. It is not possible to accurately assess future radon concentrations in buildings before they are constructed. Accurate tests of radon concentrations can only be made when the buildings have been completed. Because of this, new buildings in moderate to high radon areas are often designed with provisions for ventilation of the lower enclosed areas should post construction testing show unacceptable radon concentrations.

Surface Drainage/Grading: The grading plan for development of building sites should consider runoff through the project and not allow ponding. New grading should not impact existing drainages or reduce mitigation provided by the irrigation ditch and should consider potential flooding impacts. We should review site grading plans for the project prior to construction.

Limitations: This study has been conducted according to generally accepted engineering geology principles and practices in this area at this time. We make no warranty either express or implied. The conclusions and recommendations submitted in this report are based upon the data obtained from the field reconnaissance, review of published geologic reports, aerial photograph interpretation, and our experience in the area. This report has been prepared for the exclusive use for our client and is an evaluation of the potential influence of the geology on the proposed development. We are not responsible for technical interpretations by others of our information. Additional study will be needed if additional debris flow and flood, and rockfall mitigation is proposed. As the project evolves, we should provide continued consultation, conduct additional evaluations and review and monitor the implementation of our recommendations. Significant design changes may require additional analysis or modifications to the recommendations presented herein.

If you have questions or if we may be of further assistance, please let us know.

Respectfully Submitted,

HEPWORTH - PAWLAK GEOTECHNICAL, INC.

Scott W. Richards, E.I.
Engineering Geologist

Reviewed by:

Steven L. Pawlak, P.E.

STEVEN L. PAWLAK REGISTERED 15222 2/9/09 PROFESSIONAL ENGINEER STATE OF COLORADO

SWR/vam

References:

Dubiel, R. F., 1993, *Preliminary Geologic Radon Potential Assessment of Colorado in Geologic Radon Potential EPA Region 8, Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming: U. S. Geological Survey Open File Report 93-292-H.*

Frankel, A. D. and Others, 2002, *Documentation for the 2002 Update of the National Seismic Hazard Maps:* U. S. Geological Survey Open File Report 02-420.

Kirkham, R. M. and Rogers, W. P., 1985, *Colorado Earthquake Data and Interpretations 1867 to 1985:* Colorado Geological Survey Bulletin 46.

Kirkham, R. M. and Scott, R. B., 2002, *Introduction to Late Cenozoic Evaporite Tectonism and Volcanism in West-Central, Colorado*, in Kirkham R. M., Scott, R.

Kirkham, R. M., Streufert, R. K., and Cappa, J. A., 1995, *Geologic Map of the Glenwood Springs Quadrangle, Garfield County, Colorado*, Colorado Geological Survey Open File Report 95-3.

Nelson-Moore, J.L., Collins, D.B., and Hornbaker, A.L., 1978, Radioactive mineral Occurrences of Colorado: Colorado Geological Survey Bulletin 40 (reprinted as a CD-ROM, 2005).

Soule, J.M. and Stover, B.K., 1985, *Surficial Geology, Geomorphology, and General Engineering Geology of Parts of the Colorado River Valley, Roaring Fork River Valley, and Adjacent Areas, Garfield County, Colorado:* Colorado Geological Survey Open-File Report 85-1.

Garfield County

Community Development Department
108 8th Street, Suite 401
Glenwood Springs, CO 81601
(970) 945-8212
www.garfield-county.com

ONSITE WASTEWATER TREATMENT SYSTEM (OWTS) PERMIT APPLICATION

TYPE OF CONSTRUCTION

☒ New Installation ☐ Alteration ☐ Repair

WASTE TYPE

☒ Dwelling ☐ Transient Use ☐ Comm./Industrial ☐ Non-Domestic

☐ Other Describe _____

INVOLVED PARTIES

Property Owner: CHRISTOPHER JANUSZ Phone: (970) 948-2011

Mailing Address: 3644 HWY 82 GWS CO 81601

Email Address: CMJANUSZ123@GMAIL.COM

Contractor: SAME OWNER Phone: (____) _____

Mailing Address: _____

Email Address: _____

Engineer: ALL SERVICE SEPTIC CARLA OSTBERG Phone: (970) 309-5299

Mailing Address: 33 FOUR WHEELE DRIVE RD

Email Address: CARLA.OSTBERG@GMAIL.COM.

PROJECT NAME AND LOCATION

Job Address: 3644 HWY 82 GWS CO 81601

Assessor's Parcel Number: 2185-271-34-002 Sub. JANUSZ Lot 2A Block ____

Building or Service Type: SINGLE FAMILY+ADU #Bedrooms: 4 Garbage Disposal(Y/N) Y

Distance to Nearest Community Sewer System: WEST OF HWY 82

Was an effort made to connect to the Community Sewer System: NO

Type of OWTS	☒ Septic Tank	☐ Aeration Plant	☐ Vault	☐ Vault Privy	☐ Composting Toilet
	☐ Recycling, Potable Use	☐ Recycling	☐ Pit Privy	☐ Incineration Toilet	
	☐ Chemical Toilet	☐ Other _____			
Ground Conditions	Depth to 1st Ground water table _____	Percent Ground Slope _____			
Final Disposal by	☒ Absorption trench, Bed or Pit	☐ Underground Dispersal	☐ Above Ground Dispersal		
	☐ Evapotranspiration	☐ Wastewater Pond	☐ Sand Filter		
	☐ Other _____				
Water Source & Type	☒ Well	☐ Spring	☐ Stream or Creek	☐ Cistern	
	☐ Community Water System Name _____				
Effluent	Will Effluent be discharged directly into waters of the State? ☐ Yes ☒ No				

CERTIFICATION

Applicant acknowledges that the completeness of the application is conditional upon such further mandatory and additional test and reports as may be required by the local health department to be made and furnished by the applicant or by the local health department for purposed of the evaluation of the application; and the issuance of the permit is subject to such terms and conditions as deemed necessary to insure compliance with rules and regulations made, information and reports submitted herewith and required to be submitted by the applicant are or will be represented to be true and correct to the best of my knowledge and belief and are designed to be relied on by the local department of health in evaluating the same for purposes of issuing the permit applied for herein. I further understand that any falsification or misrepresentation may result in the denial of the application or revocation of any permit granted based upon said application and legal action for perjury as provided by law.

I hereby acknowledge that I have read and understand the Notice and Certification above as well as have provided the required information which is correct and accurate to the best of my knowledge.

CHRIS JANUSZ Chris Janusz — 4-11-18

Property Owner Print and Sign — **Date**

OFFICIAL USE ONLY

Special Conditions:

Permit Fee:	Perk Fee:	Total Fees:	Fees Paid:
123.00	ENG.	123.00	123.00
Building Permit	**Septic Permit:**	**Issue Date:**	**Balance Due:**
BLMF-5231	SEPT-5232		Ø

BUILDING/ PLANNING DIVISION: _____ _____

Signed Approval — **Date**

PD. $123.00, ✓# 1319, 4/30/18

33 Four Wheel Drive Rd
Carbondale, CO 81623
970-309-5259

April 17, 2018

Project No. C1369

Chris Janusz
cmjanusz123@gmail.com

Subsurface Investigation and Onsite Wastewater Treatment System Design
4-Bedroom Residence
3644 Hwy 82
Garfield County, Colorado

Chris,

ALL SERVICE septic, LLC performed a subsurface investigation and completed an onsite wastewater treatment system (OWTS) design for the subject residence. The property is located outside of Glenwood Springs, in an area where OWTSs are necessary.

Legal Description: MBL HOME TITLE: 24E714809 SERIAL: 5TFK10WP8515CU YEAR: 1959 MAKE: DETROITER 10 X 45 SPACE: 0
Parcel ID: 2185-271-00-027

SITE CONDITIONS

The property is currently developed with a mobile home. The mobile home will be removed and replaced with a 4-bedroom, modular, single-family residence. The existing OWTS components will be properly abandoned.

There is a private well located on the property. The new septic tank will be located greater than 50-feet from the proposed septic tank and greater than 100-feet from the proposed soil treatment area (STA).

The property slopes to the southwest with a moderate grade. There is a fairly level area where we have proposed the STA. The site is vegetated with native grasses and bushes.

A ditch in a culvert is located approximately 80-feet north of the proposed STA. There is also a power pole in close proximity to the proposed STA. A minimum 10-foot setback will be maintained from the power pole to the STA. A minimum 10-foot setback will also be maintained from the STA to the property boundary.

SUBSURFACE

The subsurface was investigated on April 13, 2018 by digging one soil profile test pit excavation (Test Pit). Space on the property is limited for multiple Test Pits. A visual and tactile soil analysis was completed by Carla Ostberg.[1]

The materials encountered in the Test Pit #1 consisted of reddish brown loamy sand to a maximum depth explored of 7-feet. No bedrock or groundwater was encountered.

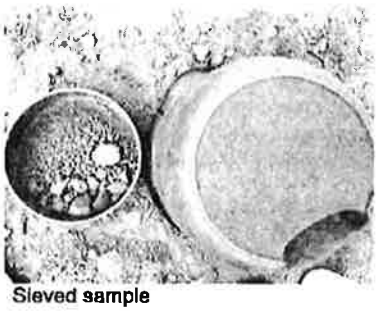
---

[1] Carla Ostberg holds a Certificate of Attendance and Examination from the CPOW Visual and Tactile Evaluation of Soils Training.

A tactile analysis of the soils was taken from Test Pit #1 at 3-feet below grade. The soil formed a ball but did not form a ribbon. Soil structure shape was single grain, soil structure grade was moderate, and consistence was loose. The texture of the soil was gritty.

STA sizing is based on Soil Type 1, Loamy Sand with granular structure type and moderate structure grade. **A long term acceptance rate (LTAR) of 0.8 gallons per square foot will be used to design the OWTS, in accordance with Table 10-1 Soil Type 1 presented in the Garfield County On-Site Wastewater Treatment System Regulations, adopted April 14, 2014.**

Soil Profile Test Pit



Sieved sample

DESIGN SPECIFICATIONS

The existing septic tank and STA will be abandoned in place. The septic tank must be collapsed and remaining void filled with gravel, sand, or compacted soil.

Design Calculations:
Average Design Flow = 75 GPD x 2 people/bedroom x 4 Bedrooms = 525 GPD
LTAR = 0.8 GPD/SF
525 GPD / 0.8 GPD/SF x 1.0 (pressure dosed bed) x 0.7 (chambers) = 460 SF

The *new* OWTS design is based on 4-bedrooms. An average daily wastewater flow of 525 GPD will be used.

The installation must include a 1500-gallon, two-compartment concrete septic tank with an Orenco® ProPak and **PF5005 pump** in the second compartment. The septic tank must be set at an elevation that allows a minimum 2% fall from the house sewer line and a minimum 1% for drain back of the pump line from STA to the septic tank. Floats must be set to dose approximately 75 gallons per pump cycle, allowing for approximately 4 gallons of drain back after each pump cycle. The control panel for the pumping system must be located within line of sight of the septic tank. We recommend contracting with Valley Precast out of Buena Vista for start-up of the pumping system.

Effluent will be pressure dosed through a 1.5-inch diameter pump line from the septic tank to the STA. The pump line must have a minimum 1% grade for proper drain back into the pump chamber of the septic tank after each pump cycle.

The STA will consist of a chamber bed with four rows of 10 'Quick 4' Standard Plus Infiltrator® chambers for a total of 40 chambers and 480 square feet of infiltrative area.[2]

Effluent will be pressure dosed to a 1.5-inch diameter level manifold and 1.5-inch diameter laterals, which must be hung with zip ties from the underside of the chambers. Laterals will have 5/32-inch diameter orifices facing up, with the exception of the first and last holes facing down for drainage. We recommend Orenco® Orifice Shields be placed on the downward facing orifices. The orifices must be placed 2-feet on center. Each lateral must end in a 90 degree ell facing up with a ball valve for flushing. Valves may be placed in a valve box, accessible from grade. Inspection ports must be placed at each corner of the chamber bed. Ports may be cut to grade and covered with a valve box for access.

The component manufacturers are typical of applications used by contractors and engineers in this area. Alternatives may be considered or recommended by contacting our office. Construction must be according to Garfield County On-Site Wastewater Treatment System Regulations, the OWTS Permit provided by Garfield County Building Department, and this design.

REVEGETATION REQUIREMENTS

An adequate layer of good quality topsoil capable of supporting revegetation shall be placed over the entire disturbed area of the OWTS installation. A mixture of native grass seed that has good soil stabilizing characteristics (but without taproots), provides a maximum transpiration rate, and competes well with successional species. No trees or shrubs, or any vegetation requiring regular irritation shall be placed over the STA. Until vegetation is reestablished, erosion and sediment control measures shall be implemented and maintained on site. The owner of the OWTS shall be responsible for maintaining proper vegetation cover.

OPERATION INFORMATION AND MAINTENANCE

The property owner shall be responsible for the operation and maintenance of each OWTS servicing the property. The property owner is responsible for maintaining service contracts for manufactured units, alternating STAs, and any other components needing maintenance.

Geo-fabrics or plastics should not be used over the STA. No heavy equipment, machinery, or materials should be placed on backfilled STAs. Livestock should not graze on the STA. Plumbing fixtures should be checked to ensure that no additional water is being discharged to OWTS. For example, a running toilet or leaky faucet can discharge hundreds of gallons of water a day and harm a STA.

If an effluent filter or screen has been installed in the OWTS, we recommend this filter or screen be cleaned annually, or as needed. If the OWTS consists of a pressurized pump system, we recommend the laterals be flushed annually, or as needed.

The homeowner should pump the septic tank every two years, or as needed gauged by measurement of solids in the tank. Garbage disposal use should be minimized, and non-biodegradable materials should not be placed into the OWTS. Grease should not be placed in household drains. Loading from a water softener should not be discharged into the OWTS. No hazardous wastes should be directed into the OWTS. Mechanical room drains should not discharge into the OWTS. The OWTS is engineered for domestic waste only.

---

[2] ARC 36 chambers may be used instead of Infiltrator® products. These chambers are slightly larger and if used should include 4 rows of 12 ARC 36 chambers.

ADDITIONAL CONSTRUCTION NOTES

If design includes a pump, weep holes must be installed to allow pump lines to drain to minimize risk of freezing. The pump shall have an audible and visual alarm notification in the event of excessively high water conditions and shall be connected to a control breaker separate from the high water alarm breaker and from any other control system circuits. The pump system shall have a switch so the pump can be manually operated.

Excavation equipment must not drive in excavation of the STA due to the potential to compact soil. Extensions should be placed on all septic tank components to allow access to them from existing grade. Backfill over the STA must be uniform and granular with no material greater than minus 3-inch.

INSTALLATION OBSERVATIONS

ALL SERVICE septic, LLC must view the OWTS during construction. The OWTS observation should be performed before backfill, after placement of OWTS components. Septic tanks, distribution devices, pumps, dosing siphons, and other plumbing, as applicable, must also be observed. ALL SERVICE septic, LLC should be notified 48 hours in advance to observe the installation.

LIMITS:

The design is based on information submitted. If soil conditions encountered are different from conditions described in report, ALL SERVICE septic, LLC should be notified. All OWTS construction must be according to the county regulations. Requirements not specified in this report must follow applicable county regulations. The contractor should have documented and demonstrated knowledge of the requirements and regulations of the county in which they are working. Licensing of Systems Contractors may be required by county regulation.

Please call with questions.

Sincerely,

ALL SERVICE septic, LLC

Carla Ostberg

Carla Ostberg, MPH, REHS

Reviewed By:

Richard H. Petz, P

COLORADO LICENSED
RICHARD HERBERT PETZ
38662
PROFESSIONAL ENGINEER

Pump Selection for a Pressurized System - Single Family Residence Project

C1369 / Janusz Residence

Parameters

Discharge Assembly Size	2.00	inches
Transport Length	36	feet
Transport Pipe Class	40	
Transport Line Size	1.50	inches
Distributing Valve Model	None	
Max Elevation Lift	10	feet
Manifold Length	9	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.50	inches
Number of Laterals per Cell	4	
Lateral Length	40	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.50	inches
Orifice Size	0.62	inches
Orifice Spacing	2	feet
Residual Head	5	feet
Flow Meter	None	Inches
'Add-on' Friction Losses	0	feet

Calculations

Minimum Flow Rate per Orifice	0.68	gpm
Number of Orifices per Zone	84	
Total Flow Rate per Zone	57.1	gpm
Number of Laterals per Zone	4	
% Flow Differential 1st Last Orifice	1.8	%
Transport Velocity	9.0	fps

Frictional Head Losses

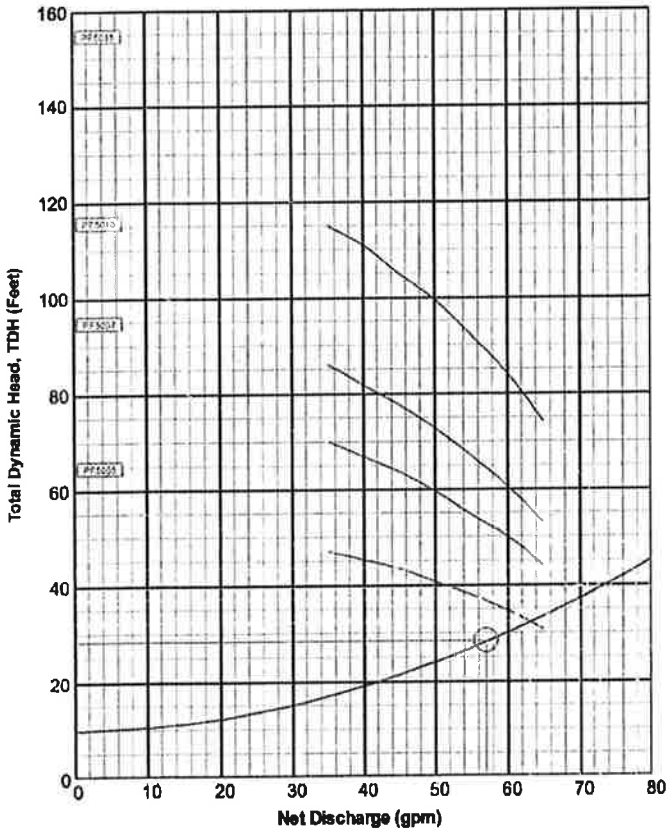
Loss through Discharge	6.5	feet
Loss in Transport	6.2	feet
Loss through Valve	0.0	feet
Loss in Manifold	0.4	feet
Loss in Laterals	0.2	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line	3.8	gals
Vol of Manifold	0.9	gals
Vol of Laterals per Zone	16.9	gals
Total Volume	21.7	gals

Minimum Pump Requirements

Design Flow Rate	57.1	gpm
Total Dynamic Head	28.3	feet



PumpData

PF5005 High Head Effluent Pump
50 GPM, 1/2HP
115/230V 1Ø 60Hz,200/230V3Ø 60Hz

PF5007 High Head Effluent Pump
50 GPM, 3/4HP
230V 1Ø 60Hz, 200/230/460V 3Ø 60Hz

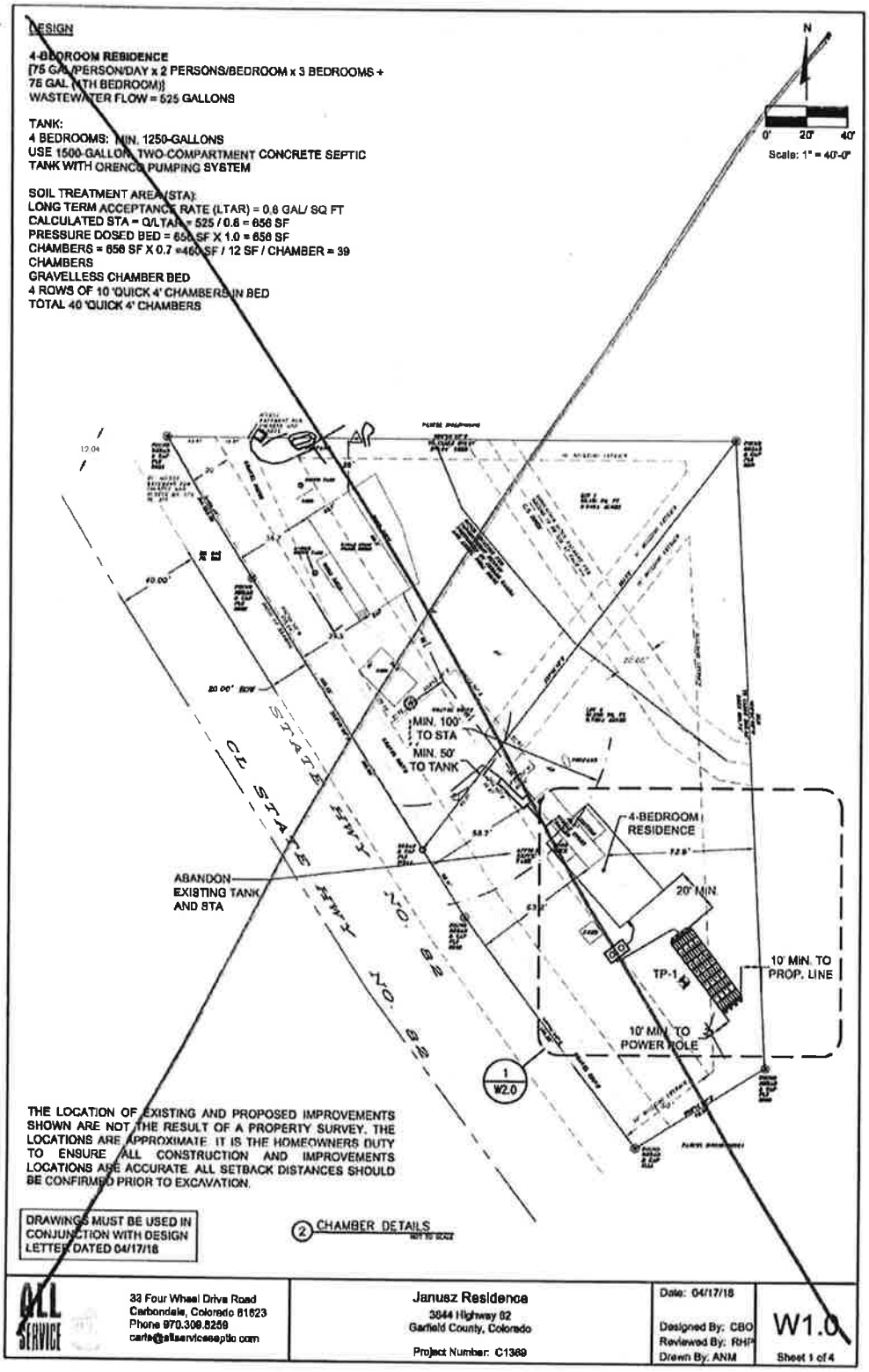
PF5010 High Head Effluent Pump
50 GPM, 1HP
230V 1Ø 60Hz, 200/460V 3Ø 60Hz

PF5015 High Head Effluent Pump
50 GPM, 1-1/2HP
230V 1Ø 60Hz, 200V 3Ø 60Hz

Legend

System Curve:
Pump Curve:
Pump Optimal Range:
Operating Point:
Design Point:

OSI
Orenco Systems Incorporated


DESIGN
4-BEDROOM RESIDENCE
[75 GAL/PERSON/DAY x 2 PERSONS/BEDROOM x 3 BEDROOMS + 75 GAL (4TH BEDROOM)]
WASTEWATER FLOW = 525 GALLONS
TANK:
4 BEDROOMS: MIN. 1250-GALLONS
USE 1500-GALLON, TWO-COMPARTMENT CONCRETE SEPTIC TANK WITH ORENCO PUMPING SYSTEM
SOIL TREATMENT AREA (STA):
LONG TERM ACCEPTANCE RATE (LTAR) = 0.8 GAL/ SQ FT
CALCULATED STA = Q/LTAR = 525 / 0.8 = 656 SF
PRESSURE DOSED BED = 656 SF X 1.0 = 656 SF
CHAMBERS = 656 SF X 0.7 =460 SF / 12 SF / CHAMBER = 39 CHAMBERS
GRAVELLESS CHAMBER BED
4 ROWS OF 10 'QUICK 4' CHAMBERS IN BED
TOTAL 40 'QUICK 4' CHAMBERS
N
0'
20'
40'
Scale: 1" = 40'-0"
MIN. 100' TO STA
MIN. 50' TO TANK
4-BEDROOM RESIDENCE
ABANDON EXISTING TANK AND STA
20' MIN.
10' MIN. TO PROP. LINE
TP-1
10' MIN. TO POWER POLE
CO STATE HWY NO. 82
1
W2.0
THE LOCATION OF EXISTING AND PROPOSED IMPROVEMENTS SHOWN ARE NOT THE RESULT OF A PROPERTY SURVEY. THE LOCATIONS ARE APPROXIMATE. IT IS THE HOMEOWNERS DUTY TO ENSURE ALL CONSTRUCTION AND IMPROVEMENTS LOCATIONS ARE ACCURATE. ALL SETBACK DISTANCES SHOULD BE CONFIRMED PRIOR TO EXCAVATION.
DRAWINGS MUST BE USED IN CONJUNCTION WITH DESIGN LETTER DATED 04/17/18
2 CHAMBER DETAILS
NOT TO SCALE
ALL SERVICE
33 Four Wheel Drive Road
Carbondale, Colorado 81623
Phone 970.309.8259
carla@allserviceseptic.com
Janusz Residence
3844 Highway 82
Garfield County, Colorado
Project Number: C1369
Date: 04/17/18
Designed By: CBO
Reviewed By: RHP
Drawn By: ANM
W1.0
Sheet 1 of 4

DESIGN

4-BEDROOM RESIDENCE
[75 GAL/PERSON/DAY x 2 PERSONS/BEDROOM x 3 BEDROOMS + 75 GAL (4TH BEDROOM)]
WASTEWATER FLOW = 525 GALLONS

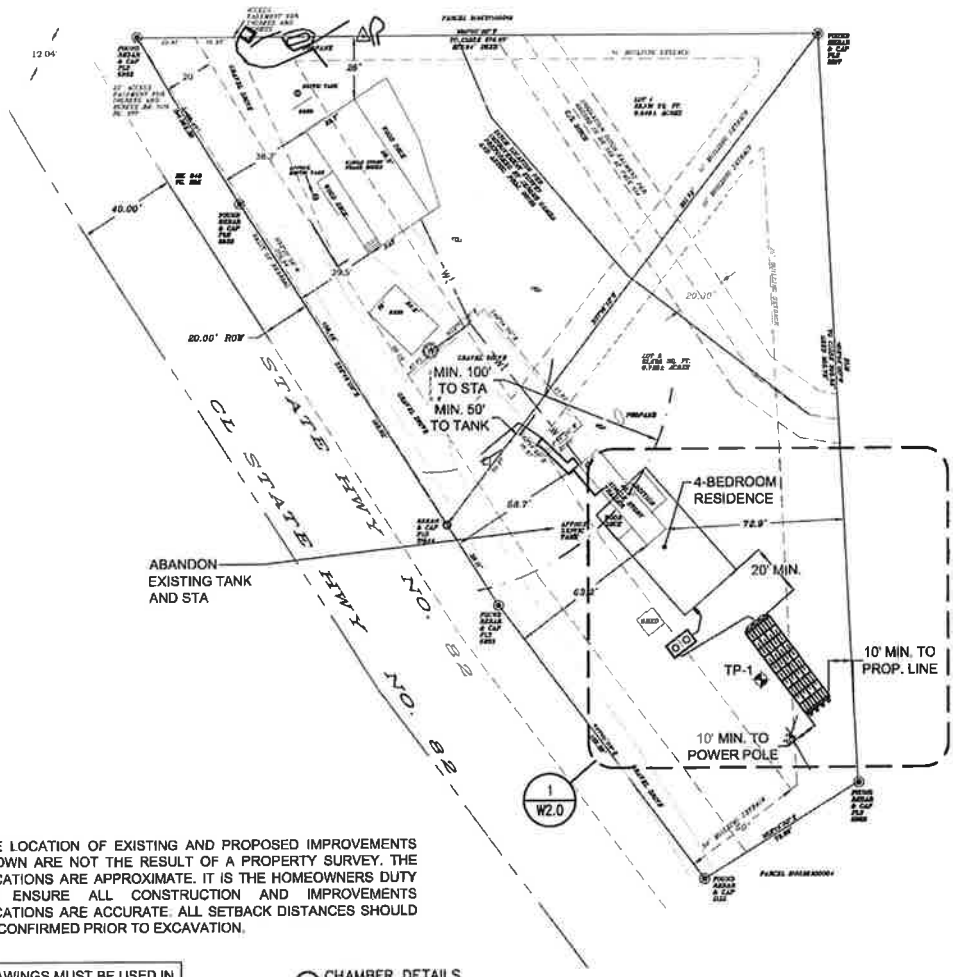
TANK:
4 BEDROOMS: MIN. 1250-GALLONS
USE 1500-GALLON, TWO-COMPARTMENT CONCRETE SEPTIC TANK WITH ORENCO PUMPING SYSTEM

SOIL TREATMENT AREA (STA):
LONG TERM ACCEPTANCE RATE (LTAR) = 0.8 GAL/ SQ FT
CALCULATED STA = Q/LTAR = 525 / 0.8 = 656 SF
PRESSURE DOSED BED = 656 SF X 1.0 = 656 SF
CHAMBERS = 656 SF X 0.7 =460 SF / 12 SF / CHAMBER = 39 CHAMBERS
GRAVELLESS CHAMBER BED
4 ROWS OF 10 'QUICK 4' CHAMBERS IN BED
TOTAL 40 'QUICK 4' CHAMBERS

N

0' 20' 40'

Scale: 1" = 40'-0"



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DRAWINGS MUST BE USED IN CONJUNCTION WITH DESIGN LETTER DATED 04/17/18

(2) CHAMBER DETAILS
NOT TO SCALE

ALL SERVICE
33 Four Wheel Drive Road
Carbondale, Colorado 81623
Phone 970.309.5259
carla@allserviceseptic.com

Janusz Residence
3644 Highway 82
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Project Number: C1369

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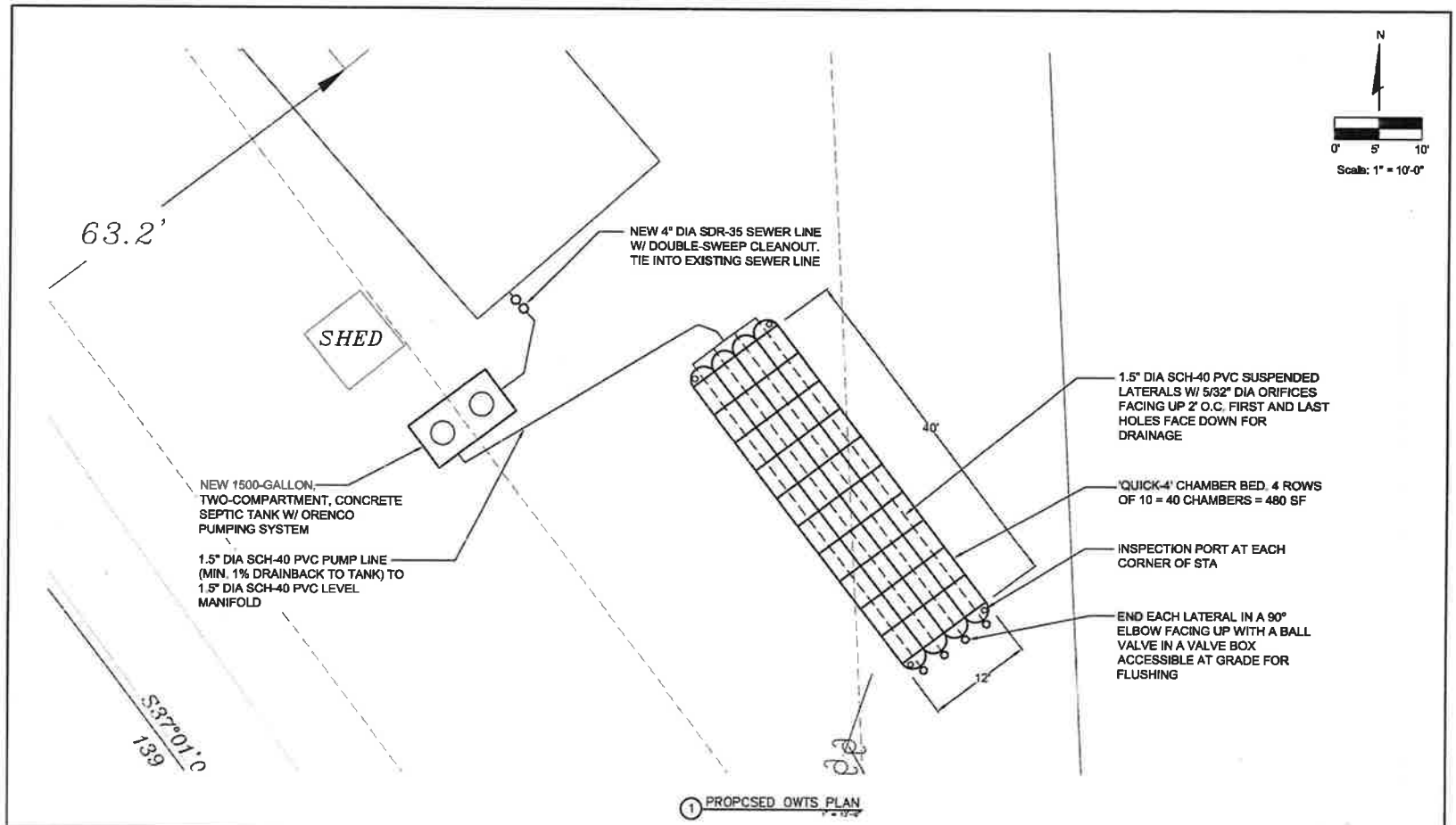
Drawn By: ANM

W1.0
Sheet 1 of 4



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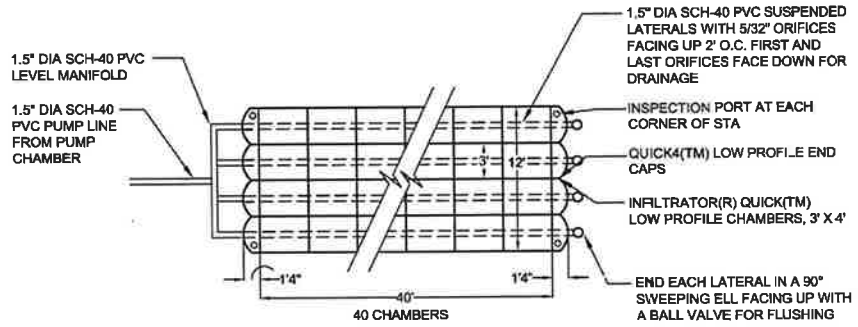

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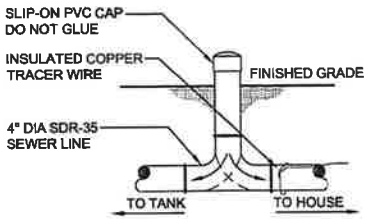
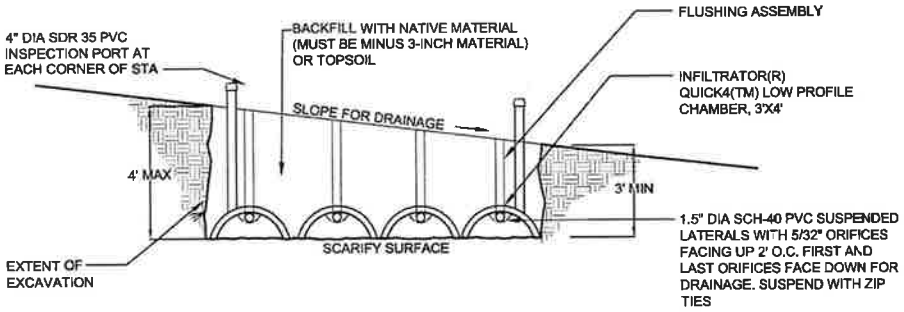
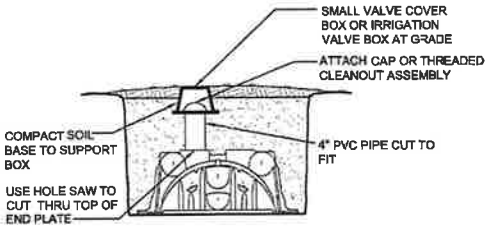


3 CLEANOUT DETAIL



2 STA SECTION



4 INSPECTION PORT DETAIL

ALL SERVICE
33 Four Wheel Drive Road
Carbondale, Colorado 81623
Phone 970.309.5259
carla@allserviceseptic.com

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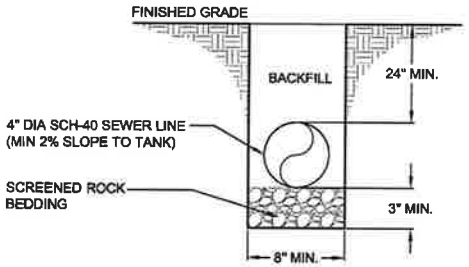
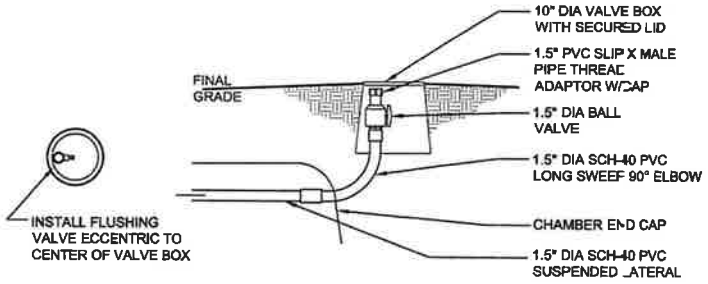
W3.0

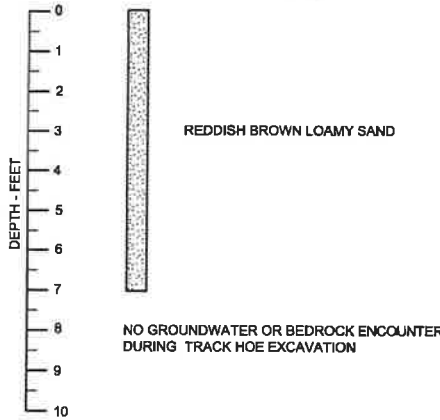


1 TRENCH DETAIL NOT TO SCALE



2 FLUSHING ASSEMBLY NOT TO SCALE

SOIL PROFILE TEST PIT NO. 1



3 SOIL LOGS 3 SOIL LOG NOT TO SCALE NOT TO SCALE

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33 Four Wheel Drive Road
Carbondale, Colorado 81623
Phone 970.309.5259
carla@allserviceseptic.com

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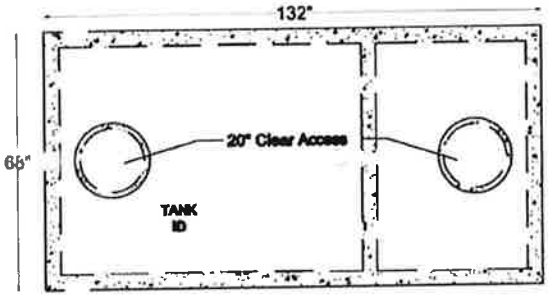
W4.0
Sheet 4 of 4

Item #
1500T-2CP-HH

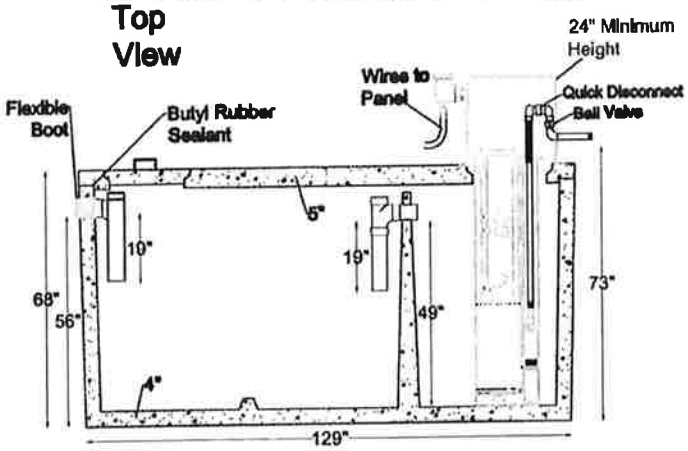
1500 Gallon Top Seam Two Compartment with High Head Pump

DESIGN NOTES
- Design per performance test per ASTM C1227
- Top surface area 62.33 ft²
- f'c @ 28 days; concrete = 6,000 PSI Min.

Installation:
- Tank to be set on 5" min. sand bed or pea gravel
- Tank to be backfilled uniformly on all sides in lifts less than 24" and mechanically compacted
- Excavated material may be used for backfill, provided large stones are removed
- Excavation should be dewatered and tank filled with water prior to being put in service for installation with water table less than 2' below grade
- Meets C1644-05 for resilient connectors
- Inlet and Outlet identified above pipe
- Delivered complete with internal piping
- PVC risers available
- Secondary safety screen available with PVC riser



Top View



Section View

ALLOWABLE BURY (Based on Water Table)	
WATER TABLE	ALLOWABLE EARTH FILL
0' – 0"	3' – 0"
1' – 0"	3' – 0"
2' – 0"	4' – 0"
3' – 0"	4' – 0"
DRY	4' – 0"

Pump:
- Lowers TSS and improves effluent quality to field
- Easiest pump system to maintain on the market
- Complete installation (wiring, panel, mounting and start-up procedures)
- Complete warranty

Service contracts available for maintenance

Digging Space	Invert		Dimensions			Net Capacity			Net Weight		
					Min.						
13' Long x 8' Wide	Inlet	Outlet	Length	Width	Height	Inlet Side	Outlet	Total	Lid	Tank	Total
56" below inlet	56"	73"	132"	68"	92"	1002 gal	507 gal	1509 gal	3600 lbs	11180 lbs	14980 lbs

VALLEY PRECAST, Inc.

Water & Wastewater
- Systems
- Products
- Service

(719) 395-6764
Fax: (719) 395-3727
Website: www.valleyprecast.com
Email: frontdesk@valleyprecast.com

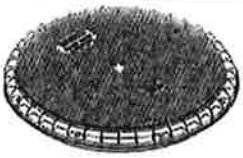
28005 Co. Rd. 317
P.O. Box 925
Buena Vista, CO 81211

Double Walled PVC Riser & Lid Options

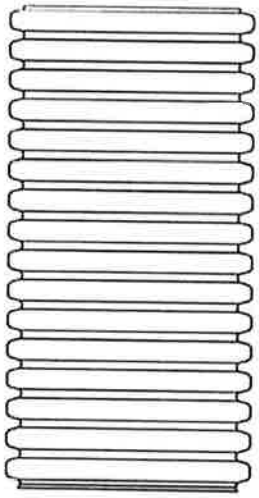
Poly Lid

(Static load tested to 5000 lbs)

- Skid resistance surface
- Available in green
- Highest level of UV Protection included
- Includes a foam gasket for airtight and watertight applications
- Includes square drive screws to discourage unauthorized entry
- Insulation panels achieve R-10 insulation rating



2" of Insulation
Standard



Orenco ® DuraFiber™ Access Lids (FLD)

Not recommended for vehicular traffic
24" and 30" Diameters

- Solid, resin-infused fiberglass construction
- 20,000-lb breaking strength
- Standard green or brown colors
- Available with or without urethane lid gasket
- Available with carbon filtration
- 4 stainless steel flathead socket cap screws & hex key wrench
- Insulated lids available - 2" or 4"

Double Walled PVC Riser

- Available in 24" and 30" Diameter
- Cut to length
- Sold in +/- 2" Increments
- Must be cut between ribs

VALLEY PRECAST, Inc.

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- Products
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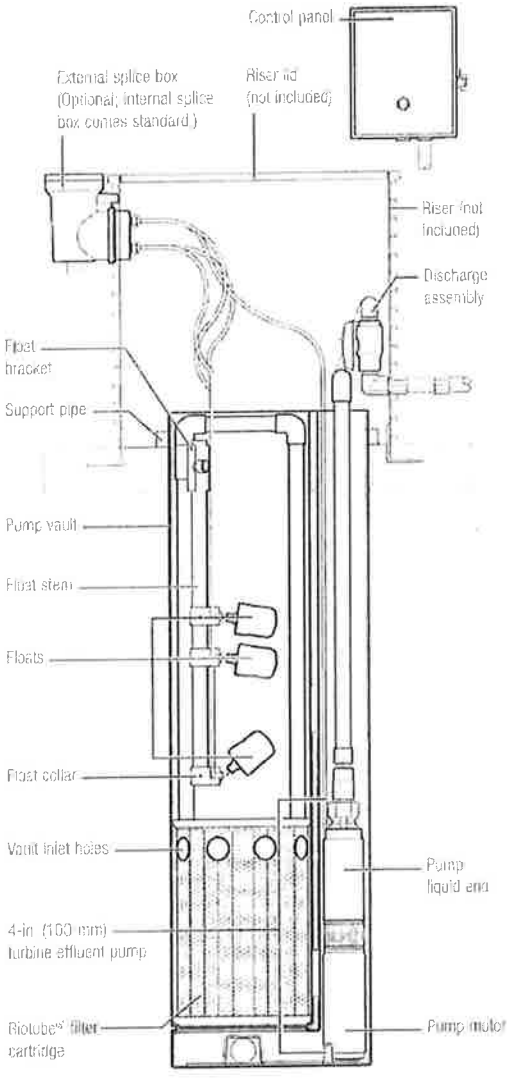
28005 Co. Rd. 317
P.O. Box 925
Buena Vista, CO 81211

Website: www.valleyprecast.com
Email: frontdesk@valleyprecast.com

Orenco®

Biotube® ProPak Pump Package™

60-Hz Series Pump Packages



Biotube® ProPak™ pump package components.

General

Orenco's Biotube® ProPak™ is a complete, integrated pump package for filtering and pumping effluent from septic tanks. And its patented pump vault technology eliminates the need for separate dosing tanks.

This document provides detailed information on the ProPak pump vault and filter, 4-in. (100-mm) 60-Hz turbine effluent pump, and control panel. For more information on other ProPak components, see the following Orenco technical documents:

- *Float Switch Assemblies* (NSU-MF-MF-1)
- *Discharge Assemblies* (NTD-HV-HV-1)
- *Splice Boxes* (NTD-SB-SB-1)
- *External Splice Box* (NTD-SB-SB-1)

Applications

The Biotube ProPak is designed to filter and pump effluent to either gravity or pressurized discharge points. It is intended for use in a septic tank (one- or two-compartment) and can also be used in a pump tank.

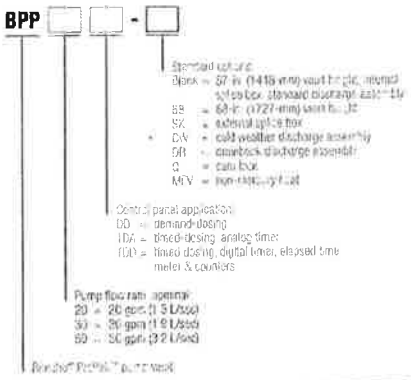
The Biotube ProPak is designed to allow the effluent filter to be removed for cleaning without the need to remove the pump vault or pump, simplifying servicing.

Complete packages are available for on-demand or timed dosing systems with flow rates of 20, 30, and 50-gpm (1.3, 1.9, and 3.2 L/sec), as well as with 50 Hz and 60 Hz power supplies.

Standard Models

BPP20DD, BPP20DD-SX, BPP30TDA, BPP30TDD-SX, BBPP50TDA, BPP50TDD-SX

Product Code Diagram



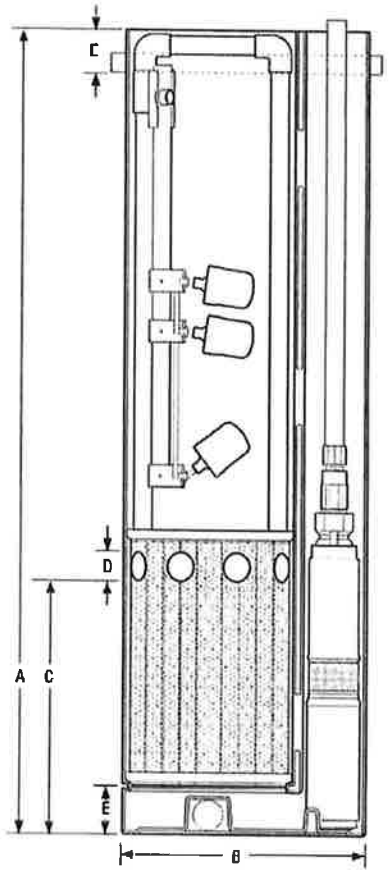
ProPak™ Pump Vault

Materials of Construction	
Vault body	Polyethylene
Support pipes	PVC
Dimensions, in. (mm)	
A - Overall vault height	57 (1448) or 68 (1727)
B - Vault diameter	17.3 (439)
C - Inlet hole height	19 (475)
D - Inlet hole diameter (eight holes total)	2 (50)
E - Vault top to support pipe bracket base	3 (76)
F - Vault bottom to filter cartridge base	4 (102)

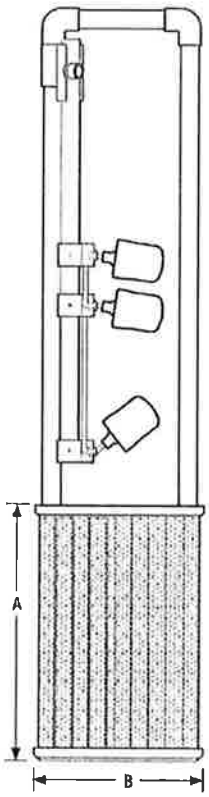
Biotube® Filter Cartridge

Materials of Construction	
Filter tubes	Polyethylene
Cartridge end plates	Polyurethane
Handle assembly	PVC
Dimensions, in. (mm)	
A - Cartridge height	18 (457)
B - Cartridge width	12 (305)
Performance	
Biotube® mesh opening	0.125 in. (3 mm)*
Total filter flow area	4.4 ft² (0.4 m²)
Total filter surface area	14.5 ft² (1.35 m²)
Maximum flow rate	140 gpm (8.8 L/sec)

*0.062-in. (1.6 mm) filter mesh available



ProPak™ pump vault (shown with Biotube filter and effluent pump)



Biotube® filter cartridge (shown with float switch assembly)

Orenco Systems® Inc., 814 Airway Ave., Sutherlin, OR 97479 USA • 800-348-9843 • 541-459-4449 • www.orenco.com

4-in. (100-mm) Turbine Effluent Pumps

Orenco's 4-in. (100 mm) Turbine Effluent Pumps are constructed of lightweight, corrosion-resistant stainless steel and engineered plastics; all are field-serviceable and repairable with common tools. All 60-Hz PF Series models are CSA certified to the U.S. and Canadian safety standards for effluent pumps, and meet UL requirements.

Power cords for Orenco's 4-in. (100-mm) turbine effluent pumps are Type SOOW 600-V motor cable (suitable for Class 1, Division 1 and 2 applications).

Materials of Construction

Discharge:	Stainless steel or glass-filled polypropylene
Discharge bearing:	Engineered thermoplastic (PEEK)
Diffusers:	Glass-filled PPO
Impellers:	Acetal (20-, 30-gmp), Noryl (50-gpm)
Intake screens:	Polypropylene
Suction connection:	Stainless steel
Drive shaft:	300 series stainless steel
Coupling:	Sintered 300 series stainless steel
Shell:	300 series stainless steel
Lubricant:	Deionized water and propylene glycol

Specifications

Nom. flow, gpm (L/sec)	Length in. (mm)	Weight lb (kg)	Discharge in., nominal [1]	Impellers
20 (1.3)	22.5 (572)	26 (11)	1.25	4
30 (1.9)	21.3 (541)	25 (11)	1.25	3
50 (3.2)	20.3 (516)	27 (12)	2.00	2

Performance

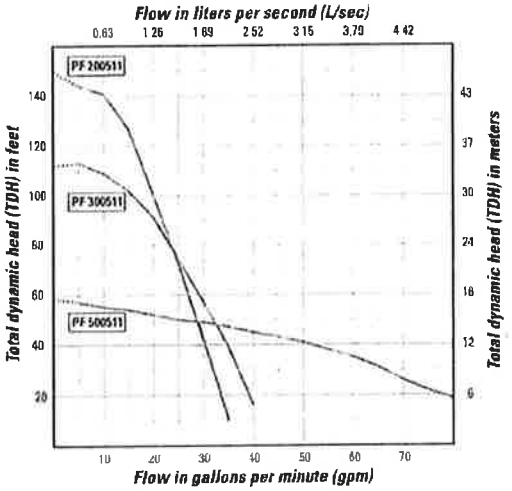
Nom. flow, gpm (L/sec)	hp (kW)	Design flow amps	Rated cycles/day	Min liquid level, in. (mm) [2]
20 (1.3)	0.5 (0.37)	12.3	300	18 (457)
30 (1.9)	0.5 (0.37)	11.8	300	20 (508)
50 (3.2)	0.5 (0.37)	12.1	300	24 (610)

[1] Discharge is female NPT threaded, U.S. nominal size, to accommodate Orenco® discharge hose and valve assemblies. Consult your Orenco Distributor about fittings to connect discharge assemblies to metric-sized piping.

[2] Minimum liquid level is for single pumps when installed in an Orenco Pictube® ProPak™ Pump Vault.

Pump Curves

Pump curves, such as those shown here, can help you determine the best pump for your system. Pump curves show the relationship between flow (gpm or L/sec) and pressure (TDH), providing a graphical representation of a pump's performance range. Pumps perform best at their *nominal flow rate*, measured in gpm or L/sec.



Control Panel (Demand Dose)

Orenco's ProPak™ demand dose control panels are specifically engineered for the ProPak pump package and are ideal for applications such as demand dosing from a septic tank into a conventional gravity drainfield.

Materials of Construction

Enclosure	UV-resistant fiberglass, UL Type 4X
Hinges	Stainless steel

Dimensions, in. (mm)

A - Height	11.5 (290)
B - Width	9.5 (240)
C - Depth	5.4 (135)

Specifications

Panel ratings	120 V, 3/4 hp (0.56 kW), 14 A, single phase, 60 Hz
1. Motor-start contactor	16 FLA, 1 hp (0.75 kW), 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA)
2. Circuit	120 V, 10 A, OFF/ON switch, Single pole breakers
3. Toggle switch	Single-pole, double-throw HOA switch, 20 A
4. Audio alarm	95 dB at 24 in. (600 mm), warble-tone sound, UL Type 4X
5. Audio alarm	120 V, automatic reset, DIN rail mount silence relay
6. Visual alarm	7/8-in. (22-mm) diameter red lens, "Push-to-silence," 120 V LED, UL Type 4X

Control Panel (Timed Dose)

Orenco's ProPak timed dose control panels are specifically engineered for the ProPak pump package and are ideal for applications such as timed dosing from a septic tank into a pressurized drainfield or mound. Analog or digital timers are available.

Materials of Construction

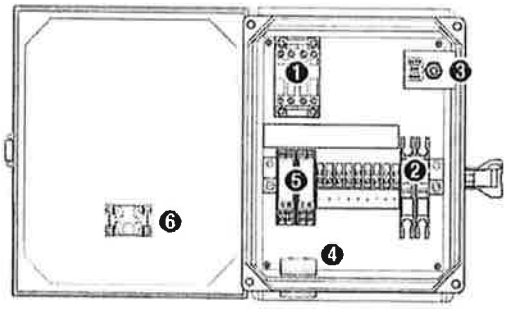
Enclosure	UV-resistant fiberglass, UL Type 4X
Hinges	Stainless steel

Dimensions, in. (mm)

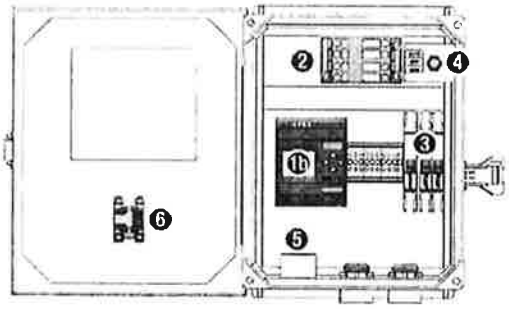
A - Height	11.5 (290)
B - Width	9.5 (240)
C - Depth	5.4 (135)

Specifications

Panel ratings	120 V, 3/4 hp (0.56 kW), 14 A, single phase, 60 Hz
Dual-mode	Programmable for timed- or demand-dosing (digital timed-dosing panels only)
1a. Analog timer (not shown)	120 V, repeat cycle from 0.05 seconds to 30 hours. Separate variable controls for OFF and ON time periods
1b. Digital timer (shown below)	120-V programmable logic unit with built-in LCD screen and programming keys. Provides control functions and timing for panel operation
2. Motor-start contactor	16 FLA, 1 hp (0.75 kW), 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA)
3. Circuit breakers	120 V, 10 A, OFF/ON switch, Single pole 120 V
4. Toggle Switch	Single-pole, double-throw HOA switch, 20 A
5. Audio alarm	95 dB at 24 in. (600 mm), warble-tone sound, UL Type 4X
6. Visual alarm	7/8-in. (22-mm) diameter red lens, "Push-to-silence", 120 V LED, UL Type 4X



Control panel, demand-dose



Control panel, timed-dose (digital timer model shown)

Orenco Systems® Inc., 814 Airway Ave., Sutherlin, OR 97479 USA • 800-348-9843 • 541-459-4449 • www.orenco.com

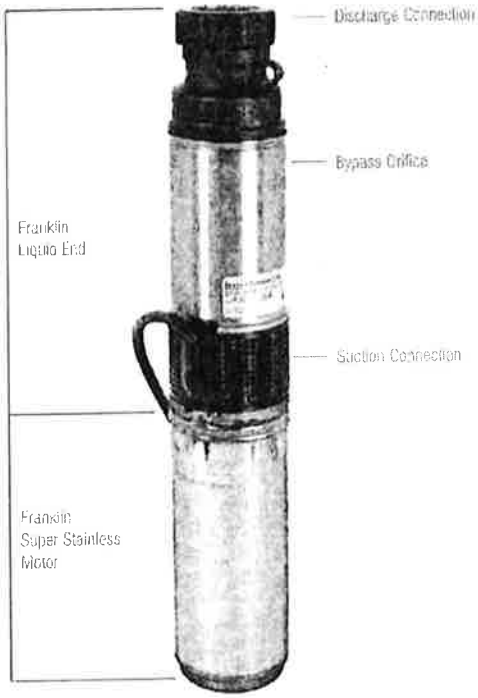
Orenco® Technical Data Sheet

PF Series 4-inch (100-mm) Submersible Effluent Pumps

Applications

Our 4-inch (100-mm) Submersible Effluent Pumps are designed to transport screened effluent (with low TSS counts) from septic tanks or separate dosing tanks. All our pumps are constructed of lightweight, corrosion-resistant stainless steel and engineered plastics; all are field-serviceable and repairable with common tools; and all 60-Hz PF Series models are CSA certified to the U.S. and Canadian safety standards for effluent pumps, meeting UL requirements.

Orenco's Effluent Pumps are used in a variety of applications, including pressurized drainfields, packed bed filters, mounds, aerobic units, effluent irrigation, effluent sewers, wetlands, lagoons, and more. These pumps are designed to be used with a Biotube® pump vault or after a secondary treatment system.



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Franklin Electric

c SP us
LR80980
LR2053896

Features/Specifications

To specify this pump for your installation, require the following:

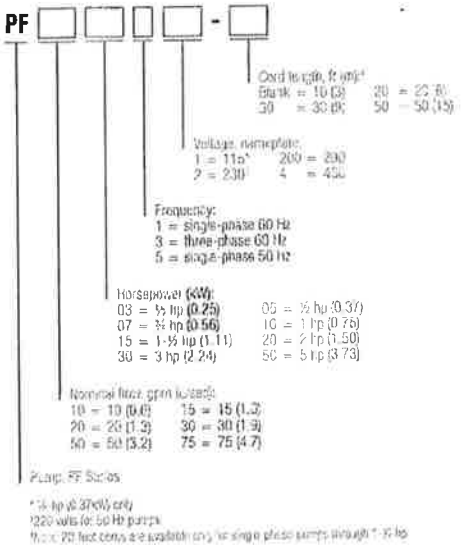
- Minimum 24-hour run-dry capability with no deterioration in pump life or performance*
- Patented 1/8-inch (3-mm) bypass orifice to ensure flow recirculation for motor cooling and to prevent air bind
- Liquid end repair kits available for better long-term cost of ownership
- TRI-SEAL™ floating impeller design on 10, 15, 20, and 30 gpm (0.6, 1.0, 1.3, and 1.9 L/sec) models; floating stack design on 50 and 75 gpm (3.2 and 4.7 L/sec) models
- Franklin Electric Super Stainless motor, rated for continuous use and frequent cycling
- Type SOOW 600-V motor cable
- Five-year warranty on pump or retrofit liquid end from date of manufacture against defects in materials or workmanship

** Not applicable for 5-hp (3.73 kW) models*

Standard Models

See specifications chart, pages 2-3, for a list of standard pumps. For a complete list of available pumps, call Orenco.

Product Code Diagram



*½ hp (0.37kW) only
†220 volts for 50 Hz pumps
‡Up to 20 foot cords are available only for single phase pumps through ¾ hp

Specifications, 60 Hz

Pump Model	Design gpm (L/sec)	Horsepower (kW)	Phase	Nameplate voltage	Actual voltage	Design flow amps	Max amps	Impellers	Discharge size and material [1]	Length, in. (mm)	Min. liquid level, [2] in. (mm)	Weight, [3] lb (kg)	Rated cycles/day
PF100511	10 (0.6)	0.50 (0.37)	1	115	120	12.7	12.7	6	1 ¼ in. GFP	23.0 (660)	16 (406)	26 (12)	300
PF100512	10 (0.6)	0.50 (0.37)	1	230	240	6.3	6.3	6	1 ¼ in. GFP	23.0 (660)	16 (406)	26 (12)	300
PF10053200	10 (0.6)	0.50 (0.37)	3	200	208	3.8	3.8	6	1 ¼ in. GFP	23.0 (660)	16 (406)	26 (12)	300
PF100712 [4,5]	10 (0.6)	0.75 (0.56)	1	230	240	8.3	8.3	8	1 ¼ in. GFP	25.9 (658)	17 (432)	30 (14)	300
PF10073200 [4,5]	10 (0.6)	0.75 (0.56)	3	200	208	5.1	5.2	8	1 ¼ in. GFP	25.4 (645)	17 (432)	31 (14)	300
PF101012 [5,6]	10 (0.6)	1.00 (0.75)	1	230	240	9.6	9.6	9	1 ¼ in. GFP	27.9 (709)	18 (457)	33 (15)	100
PF10103200 [5,6]	10 (0.6)	1.00 (0.75)	3	200	208	5.5	5.5	9	1 ¼ in. GFP	27.3 (693)	18 (457)	37 (17)	300
PF102012 [5,6,7,8]	10 (0.6)	2.00 (1.49)	1	230	240	12.1	12.1	18	1 ¼ in. SS	39.5 (1003)	22 (559)	48 (22)	100
PF102032 [5,6,8]	10 (0.6)	2.00 (1.49)	3	230	240	7.5	7.6	18	1 ¼ in. SS	37.9 (963)	20 (508)	44 (20)	300
PF10203200 [5,6,8]	10 (0.6)	2.00 (1.49)	3	200	208	8.7	8.7	18	1 ¼ in. SS	37.9 (963)	20 (508)	44 (20)	300
PF150311	15 (1.0)	0.33 (0.25)	1	115	120	8.7	8.8	3	1 ¼ in. GFP	19.5 (495)	15 (380)	23 (10)	300
PF150312	15 (1.0)	0.33 (0.25)	1	230	240	4.4	4.5	3	1 ¼ in. GFP	19.5 (495)	15 (380)	23 (10)	300
PF200511	20 (1.3)	0.50 (0.37)	1	115	120	12.3	12.5	4	1 ¼ in. GFP	22.3 (566)	18 (457)	25 (11)	300
PF200512	20 (1.3)	0.50 (0.37)	1	230	240	6.4	6.5	4	1 ¼ in. GFP	22.5 (572)	18 (457)	26 (12)	300
PF20053200	20 (1.3)	0.50 (0.37)	3	200	208	3.7	3.8	4	1 ¼ in. GFP	22.3 (566)	18 (457)	26 (12)	300
PF201012 [4,5]	20 (1.3)	1.00 (0.75)	1	230	240	10.5	10.5	7	1 ¼ in. GFP	28.4 (721)	20 (508)	33 (15)	100
PF20103200 [4,5]	20 (1.3)	1.00 (0.75)	3	200	208	5.8	5.9	7	1 ¼ in. GFP	27.8 (706)	20 (508)	33 (15)	300
PF201512 [4,5]	20 (1.3)	1.50 (1.11)	1	230	240	12.4	12.6	9	1 ¼ in. GFP	34.0 (864)	24 (610)	41 (19)	100
PF20153200 [4,5]	20 (1.3)	1.50 (1.11)	3	200	208	7.1	7.2	9	1 ¼ in. GFP	30.7 (780)	20 (508)	35 (16)	300
PF300511	30 (1.9)	0.50 (0.37)	1	115	120	11.8	11.8	3	1 ¼ in. GFP	21.3 (541)	20 (508)	28 (13)	300
PF300512	30 (1.9)	0.50 (0.37)	1	230	240	6.2	6.2	3	1 ¼ in. GFP	21.3 (541)	20 (508)	25 (11)	300
PF30053200	30 (1.9)	0.50 (0.37)	3	200	208	3.6	3.6	3	1 ¼ in. GFP	21.3 (541)	20 (508)	25 (11)	300
PF300712	30 (1.9)	0.75 (0.56)	1	230	240	8.5	8.5	5	1 ¼ in. GFP	24.8 (630)	21 (533)	29 (13)	300
PF30073200	30 (1.9)	0.75 (0.56)	3	200	208	4.9	4.9	5	1 ¼ in. GFP	24.6 (625)	21 (533)	30 (14)	300
PF301012 [4]	30 (1.9)	1.00 (0.75)	1	230	240	10.4	10.4	6	1 ¼ in. GFP	27.0 (686)	22 (559)	32 (15)	100
PF30103200 [4]	30 (1.9)	1.00 (0.75)	3	200	208	5.8	5.8	6	1 ¼ in. GFP	26.4 (671)	22 (559)	33 (15)	300
PF301512 [4,5]	30 (1.9)	1.50 (1.11)	1	230	240	12.6	12.6	8	1 ¼ in. GFP	32.8 (833)	24 (610)	40 (18)	100
PF30153200 [4,5]	30 (1.9)	1.50 (1.11)	3	200	208	6.9	6.9	8	1 ¼ in. GFP	29.8 (757)	22 (559)	34 (15)	300
PF301534 [4,5]	30 (1.9)	1.50 (1.11)	3	460	480	2.8	2.8	8	1 ¼ in. GFP	29.5 (685)	22 (559)	34 (15)	300
PF302012 [5,6,7]	30 (1.9)	2.00 (1.49)	1	230	240	11.0	11.0	10	1 ¼ in. SS	35.5 (902)	26 (660)	44 (20)	100
PF30203200 [5,6]	30 (1.9)	2.00 (1.49)	3	200	208	9.3	9.3	10	1 ¼ in. SS	34.0 (864)	24 (610)	41 (19)	300
PF303012 [5,6,7,8]	30 (1.9)	3.00 (2.23)	1	230	240	16.8	16.8	14	1 ¼ in. SS	44.5 (1130)	33 (838)	54 (24)	100
PF303032 [5,6,8]	30 (1.9)	3.00 (2.23)	3	230	240	10.0	10.1	14	1 ¼ in. SS	44.3 (1125)	27 (686)	52 (24)	300
PF305012 [5,6,7,8]	30 (1.9)	5.00 (3.73)	1	230	240	25.6	25.8	23	1 ¼ in. SS	66.5 (1689)	53 (1346)	82 (37)	100
PF305032 [5,6,8]	30 (1.9)	5.00 (3.73)	3	230	240	16.6	16.6	23	1 ¼ in. SS	60.8 (1544)	48 (1219)	66 (30)	300
PF30503200 [5,6,8]	30 (1.9)	5.00 (3.73)	3	200	208	18.7	18.7	23	1 ¼ in. SS	60.8 (1544)	48 (1219)	66 (30)	300
PF500511	50 (3.2)	0.50 (0.37)	1	115	120	12.1	12.1	2	2 in. SS	20.3 (516)	24 (610)	27 (12)	300
PF500512	50 (3.2)	0.50 (0.37)	1	230	240	6.2	6.2	2	2 in. SS	20.3 (516)	24 (610)	27 (12)	300
PF500532	50 (3.2)	0.50 (0.37)	3	230	240	3.0	3.0	2	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF50053200	50 (3.2)	0.50 (0.37)	3	200	208	3.7	3.7	2	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF500534	50 (3.2)	0.50 (0.37)	3	460	480	1.5	1.5	2	2 in. SS	20.3 (516)	24 (610)	28 (13)	300
PF500712	50 (3.2)	0.75 (0.56)	1	230	240	8.5	8.5	3	2 in. SS	23.7 (602)	25 (635)	31 (14)	300
PF500732	50 (3.2)	0.75 (0.56)	3	230	240	3.9	3.9	3	2 in. SS	23.7 (602)	25 (635)	32 (15)	300
PF50073200	50 (3.2)	0.75 (0.56)	3	200	208	4.9	4.9	3	2 in. SS	23.1 (587)	26 (660)	32 (15)	300

Specifications, 60 Hz (continued)

Pump Model	Design gpm (L/sec)	Horsepower (kW)	Phase	Nameplate voltage	Actual voltage	Design flow amps	Max amps	Impellers	Discharge size and material [1]	Length, in. (mm)	Min. liquid level, [2] in. (mm)	Weight, [3] lb (kg)	Rated cycles/day
PF500734	50 (3.2)	0.75 (0.56)	3	460	480	1.8	1.8	3	2 in. SS	34.8 (884)	25 (635)	31 (14)	300
PF501012	50 (3.2)	1.00 (0.75)	1	230	240	10.1	10.1	4	2 in. SS	27.0 (686)	26 (660)	35 (16)	100
PF50103200	50 (3.2)	1.00 (0.75)	3	200	208	5.7	5.7	4	2 in. SS	28.4 (671)	26 (660)	39 (18)	300
PF501034	50 (3.2)	1.00 (0.75)	3	460	480	2.2	2.2	4	2 in. SS	26.4 (671)	26 (660)	39 (18)	300
PF5015124	50 (3.2)	1.50 (1.11)	1	230	240	12.5	12.6	5	2 in. SS	32.5 (826)	30 (762)	41 (19)	100
PF501532004	50 (3.2)	1.50 (1.11)	3	200	208	7.0	7.0	5	2 in. SS	29.3 (744)	26 (660)	35 (16)	300
PF503012 [4,5,7,8]	50 (3.2)	3.00 (2.23)	1	230	240	17.7	17.7	8	2 in. SS	43.0 (1092)	37 (940)	55 (25)	100
PF50303200 [4,5,8]	50 (3.2)	3.00 (2.23)	3	200	208	13.1	13.1	8	2 in. SS	43.4 (1102)	30 (762)	55 (25)	300
PF503034 [4,5,8]	50 (3.2)	3.00 (2.23)	3	460	480	5.3	5.3	8	2 in. SS	40.0 (1016)	31 (787)	55 (25)	300
PF505012 [5,6,7,8]	50 (3.2)	5.00 (3.73)	1	230	240	26.2	26.4	13	2 in. SS	65.4 (1661)	55 (1397)	64 (29)	300
PF505032 [5,6,7,8]	50 (3.2)	5.00 (3.73)	3	230	240	16.5	16.5	13	2 in. SS	59.3 (1506)	49 (1245)	64 (29)	300
PF751012	75 (4.7)	1.00 (0.75)	1	230	240	9.9	10.0	3	2 in. SS	27.0 (686)	27 (686)	34 (15)	100
PF751512	75 (4.7)	1.50 (1.11)	1	230	240	12.1	12.3	4	2 in. SS	33.4 (848)	30 (762)	44 (20)	100

Specifications, 50 Hz

Pump Model	Design gpm (L/sec)	Horsepower (kW)	Phase	Nameplate voltage	Actual voltage	Design flow amps	Max amps	Impellers	Discharge size and material [1]	Length, in. (mm)	Min. liquid level, [2] in. (mm)	Weight, [3] lb (kg)	Rated cycles/day
PF100552	10 (0.6)	0.50 (0.37)	1	220	230	3.9	4.1	6	1 ¼ in. GFP	23.0 (584)	17 (432)	26 (12)	300
PF100752 [4,5]	10 (0.6)	0.75 (0.56)	1	220	230	6.2	6.2	9	1 ¼ in. GFP	26.8 (658)	17 (432)	30 (14)	300
PF101552 [3,4]	10 (0.6)	1.50 (1.11)	1	220	230	10.5	11.4	18	1 ¼ in. SS	39.5 (1003)	22 (559)	46 (21)	300
PF300552	30 (1.9)	0.50 (0.37)	1	220	230	4.1	4.1	4	1 ¼ in. GFP	22.5 (572)	19 (483)	26 (12)	300
PF300752	30 (1.9)	0.75 (0.56)	1	220	230	6.1	6.1	5	1 ¼ in. GFP	24.8 (630)	19 (483)	29 (13)	300
PF301052	30 (1.9)	1.00 (0.75)	1	220	230	7.4	7.4	7	1 ¼ in. GFP	28.4 (721)	20 (508)	32 (15)	100
PF301552 [4,5]	30 (1.9)	1.50 (1.11)	1	220	230	9.3	9.3	8	1 ¼ in. GFP	35.4 (899)	24 (610)	40 (18)	100
PF500552	50 (3.2)	0.50 (0.37)	1	220	230	4.0	4.0	2	2 in. SS	20.3 (516)	25 (635)	29 (13)	300
PF500752	50 (3.2)	0.75 (0.56)	1	220	230	6.3	6.4	3	2 in. SS	23.7 (602)	25 (635)	31 (14)	300
PF501052	50 (3.2)	1.00 (0.75)	1	220	230	7.3	7.4	4	2 in. SS	27.0 (686)	26 (660)	35 (16)	100
PF501552	50 (3.2)	1.50 (1.11)	1	220	230	9.1	9.1	5	2 in. SS	32.5 (826)	30 (762)	42 (19)	100
PF751052	75 (3.2)	1.00 (0.75)	1	220	230	7.3	7.3	4	2 in. SS	30.0 (762)	27 (686)	34 (15)	100

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4 [illegible]
5 [illegible]
6 [illegible]
7 [illegible]
8 [illegible]

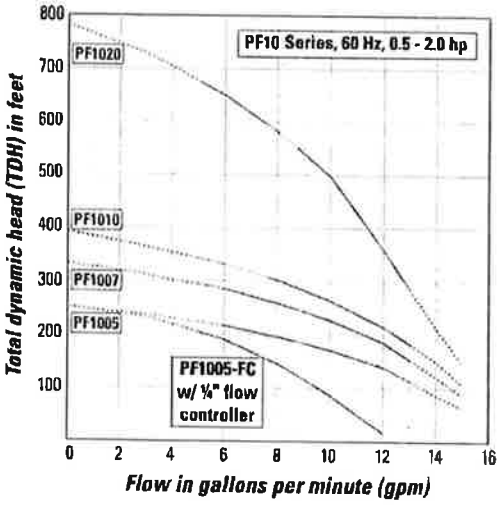
Materials of Construction

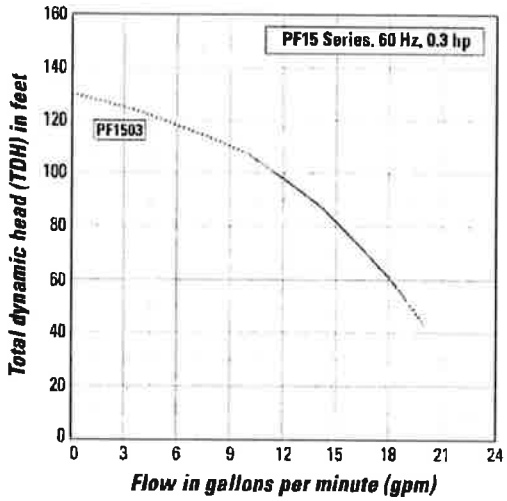
Discharge	Glass-filled polypropylene or stainless steel
Discharge bearing	Engineered thermoplastic (PEEK)
Diffusers	Glass-filled PPO (Noryl GFN3)
Impellers	Celcon® acetal copolymer on 10-, 20, and 30-gpm models; 50-gpm impellers are Noryl GFN3
Intake screen	Polypropylene
Suction connection	Stainless steel
Drive shaft	7/16 inch hexagonal stainless steel, 300 series
Coupling	Sintered stainless steel, 300 series
Shell	Stainless steel, 300 series
Motor	Franklin motor exterior constructed of stainless steel. Motor filled with deionized water and propylene glycol for constant lubrication. Hermetically sealed motor housing ensures moisture-free windings. All thrust absorbed by Kingsbury-type thrust bearing. Rated for continuous duty. Single-phase motors and 200 and 230 V 3-phase motors equipped with surge arrestors for added security. Single phase motors through 1.5 hp (1.11 kW) have built-in thermal overload protection, which trips at 203-221° F (95-105° C).

Using a Pump Curve

A *pump curve* helps you determine the best pump for your system. Pump curves show the relationship between flow (gpm or L/sec) and pressure (total dynamic head, or TDH), providing a graphical representation of a pump's optimal performance range. Pumps perform best at their nominal flow rate — the value, measured in gpm, expressed by the first two numerals in an Orenco pump nomenclature. The graphs in this section show optimal pump operation ranges with a solid line. Flow flow rates outside of these ranges are shown with a dashed line. For the most accurate pump specification, use Orenco's PumpSelect™ software.

Pump Curves, 60 Hz Models





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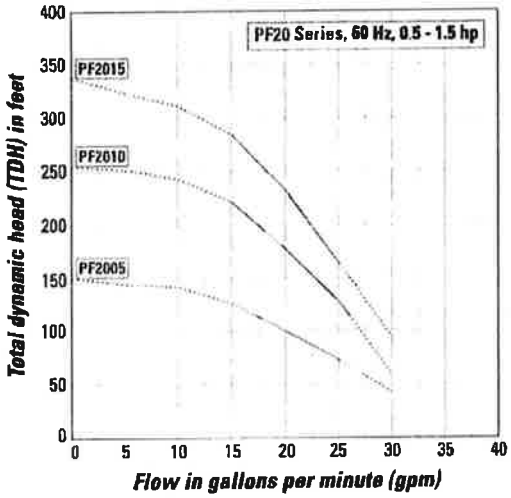
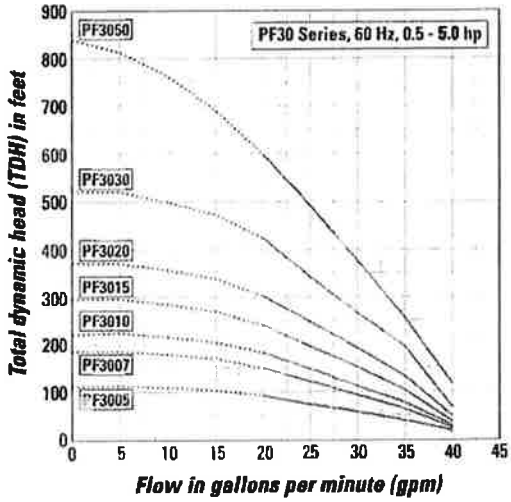
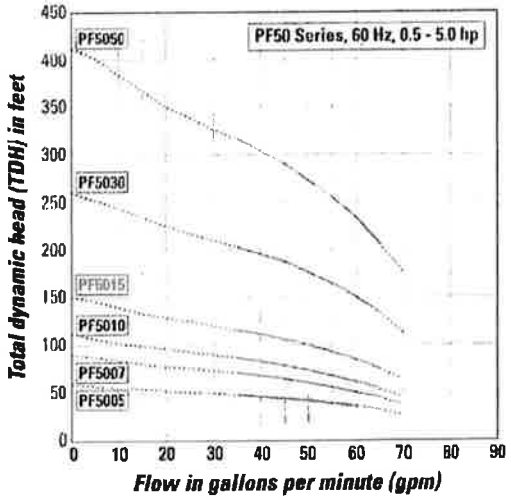
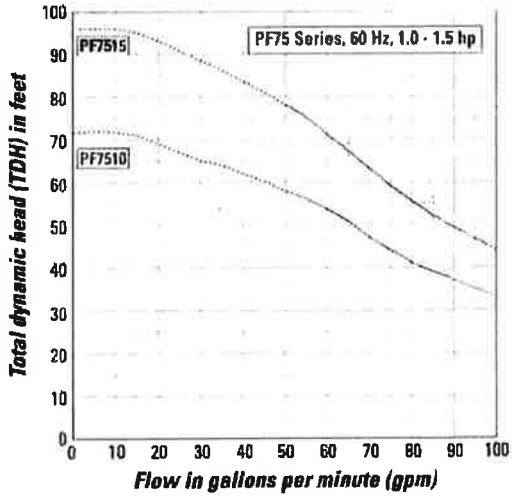
60 Hz Models (continued)

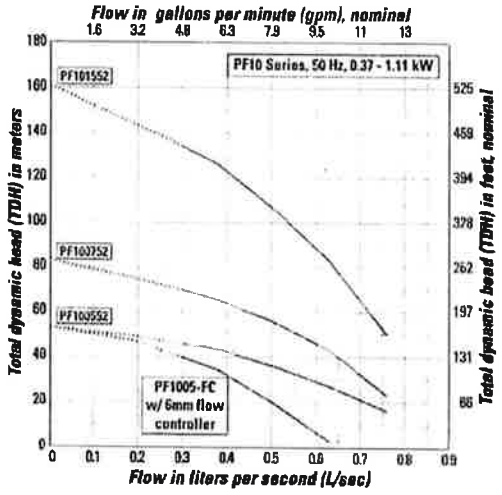


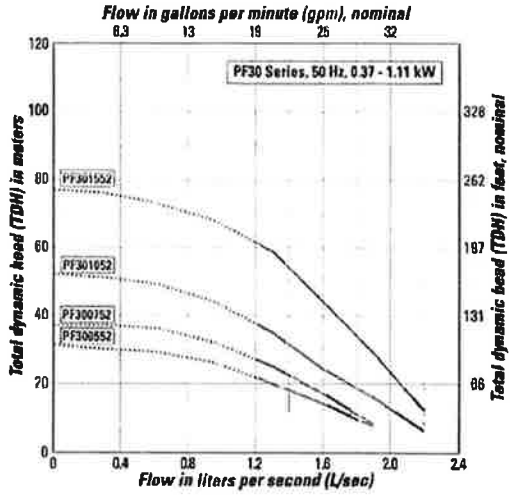


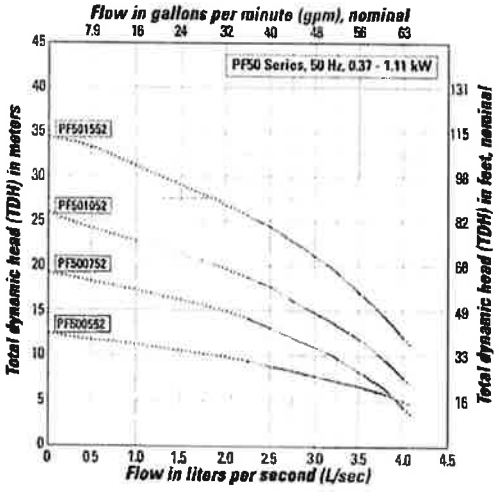


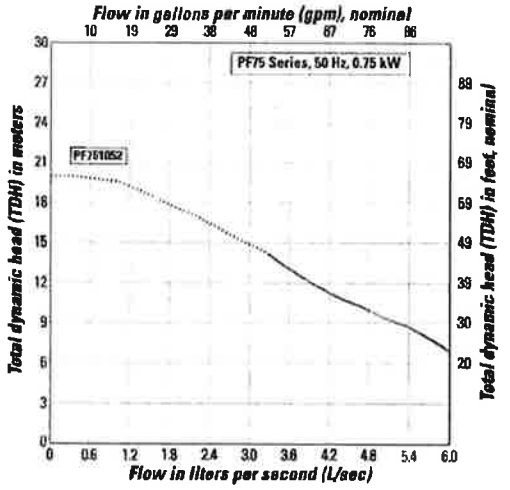


Pump Curves, 50 Hz Models



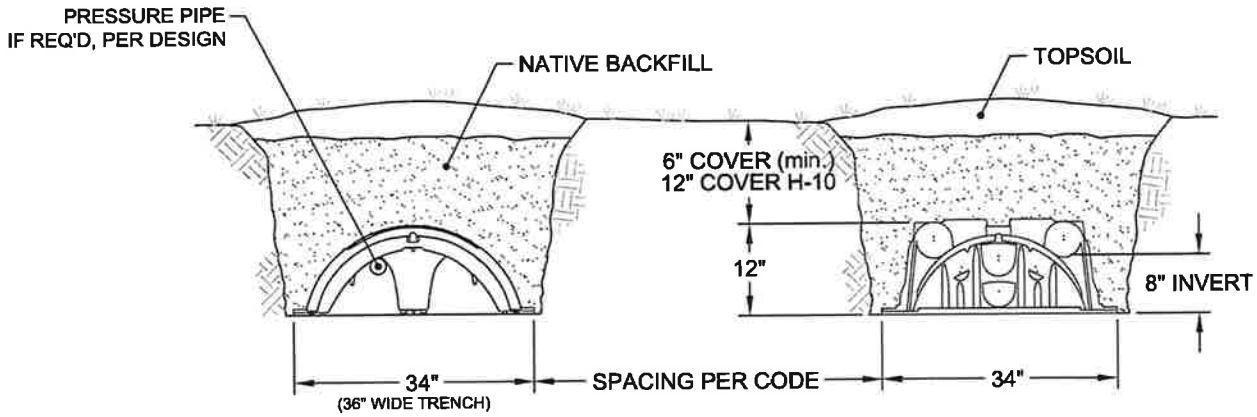






Orenco Systems® Inc., 814 Airway Ave., Sutherlin, OR 97479 USA • 800-348-9843 • 541-459-4449 • www.orenco.com

INFILTRATOR WATER TECHNOLOGIES
QUICK4 PLUS STANDARD CHAMBER
TYPICAL TRENCH DETAIL
SECTION VIEW
(NOT TO SCALE)



* LENGTH AND NUMBER OF TRENCHES DETERMINED BY DESIGN.

INFILTRATOR

INFILTRATOR WATER TECHNOLOGIES
4 Business Park Rd. Old Saybrook, CT 06475
(800) 221-4436

QUICK4 PLUS STANDARD CHAMBER
TYPICAL TRENCH DETAIL
SECTION VIEW

Drawn by: EMB		Date: 05/20/2015
Scale: NOT TO SCALE	Checked by: DFH	Sheet: 1 of 1

INFILTRATOR
water technologies

Quick4

The Quick4® Plus Standard Chamber

Quick4 Plus™ Series

The Quick4 Plus Standard Chamber offers maximum strength through its two center structural columns. This chamber can be installed in a 36-inch-wide trench. Like the original line of Quick4 chambers, it offers advanced contouring capability with its Contour Swivel Connection™ which permits turns up to 15-degrees, right or left. It is also available in four-foot lengths to provide optimal installation flexibility. The Quick4 Plus All-in-One 12 Endcap, and the Quick4 Periscope are available with this chamber, providing increased flexibility in system configurations.

Maximum Strength

Quick4 Plus Standard Chamber Benefits:

- Two center structural columns offer increased stability and superior strength
- Advanced contouring connections
- Latching mechanism allows for quick installation
- Four-foot chamber lengths are easy to handle and install
- Supports wheel loads of 16,000 lbs/axle with 12" of cover

Quick4 Plus Standard Chamber Specifications

Size 34"W x 53"L x 12"H (864 mm x 1346 mm x 305 mm)
Effective Length 48" (1219 mm)
Louver Height 8" (203 mm)
Storage Capacity 47 gal (178 L)
Invert Height 0.6" (15 mm), 5.3" (135 mm), 8.0" (203 mm), 12.7" (323 mm)

Quick4 Plus All-in-One 12 Endcap Benefits:

- May be used at the end of chamber row for an inlet/outlet or can be installed mid-trench
- Mid-trench connection feature allows construction of chamber rows with center feed, as an alternative to inletting at the ends of chamber rows
- Center-feed connection allows for easy installation of serial distribution systems
- Pipe connection options include sides, ends or top

Quick4 Plus All-in-One Periscope Benefits:

- Allows for raised invert installations
- 180° directional inletting
- 12" raised invert is ideal for serial applications

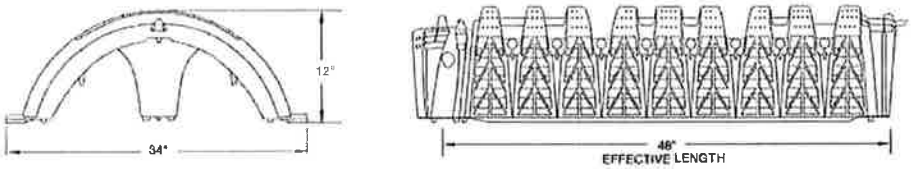
Certified by the International Association of Plumbing and Mechanical Officials (IAPMO)

APPROVED in _____

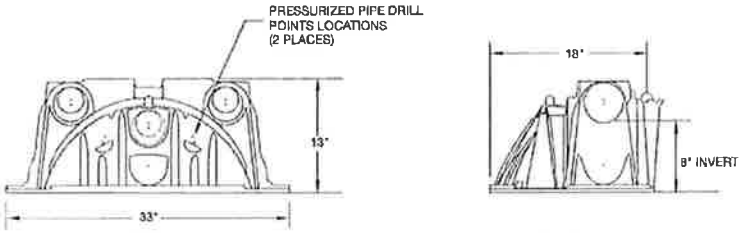
Quick4 Plus™ Series

Quick4

Quick4 Plus Standard Chamber



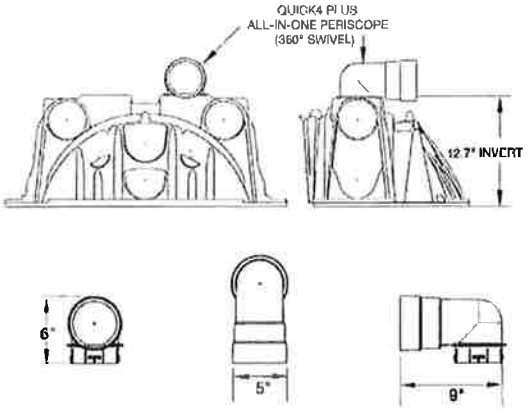
Quick4 Plus All-in-One 12 Endcap



FRONT VIEW

SIDE VIEW

Quick4 Plus All-in-One Periscope



INFILTRATOR

4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860 577-7001
1-800-221-4436
www.infiltratorwater.com

INFILTRATOR WATER TECHNOLOGIES STANDARD LIMITED WARRANTY

(a) The structural integrity of each chamber, endcap and other accessory manufactured by Infiltrator ("Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date that the septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required by applicable law, the warranty period will begin upon the date that installation of the septic system commences. To exercise its warranty rights, Holder must notify Infiltrator in writing at its Corporate Headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for Units determined by Infiltrator to be covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

(c) This Limited Warranty shall be void if any part of the chamber system is manufactured by anyone other than Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting or improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change or extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's Corporate Headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

PLUS05 0713

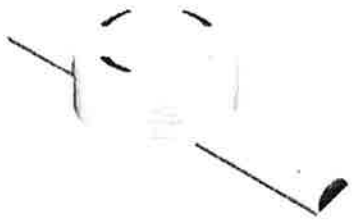
Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436

Orenco®

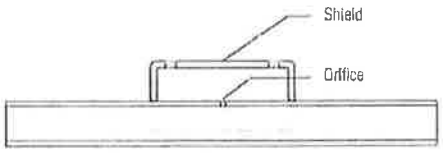
Orifice Shields

Applications

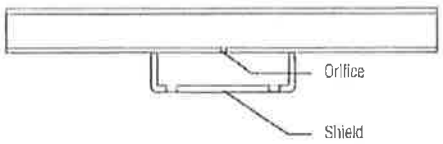
Orenco® Orifice Shields are used in a pressurized distribution system to protect the orifices from backfill debris that might cause orifice blockage.



Orifice shield installed on lateral pipe, standard configuration



Cutaway view, standard configuration



Cutaway view, cold weather configuration

General

Orenco Orifice Shields snap-fit onto laterals. They may be placed on top of or beneath a lateral, depending on the location of the orifice. Orifice shields are covered by method-of-use patent # 5,360,556.

Standard Models

OS075, OS100, OS125, OS150, OS200

Product Code Diagram

OS ☐

- ☐ = Lateral pipe size, nominal
  - 075 = 0.75 in. (20 mm)
  - 100 = 1.00 in. (25 mm)
  - 125 = 1.25 in. (32 mm)
  - 150 = 1.50 in. (40 mm)
  - 200 = 2.00 in. (50 mm)
- OS = Orifice shield

Material of Construction

PVC per ASTM D-1784

Physical Specifications

Model	Shield O.D. in. (mm)	Lateral pipe O.D. in. (mm)
OS075	3.5 (89)	1.05 (27)
OS100	3.5 (89)	1.315 (33)
OS125	3.5 (89)	1.66 (42)
OS150	4.5 (114)	1.90 (48)
OS200	4.5 (114)	2.375 (60)

Item#
SEK-

Orenco® Flushing Assemblies

Flushing Assemblies
Orenco® flushing assemblies provide easy access for lateral maintenance. Flushing assembly kits include a PVC sweep with ball valve and a polyethylene valve box enclosure.

Orenco® flushing assemblies are available in the following sizes:

- 1" diameter
- 1.25" diameter
- 1.5" diameter
- 2" diameter

Valve Boxes
Orenco® valve boxes are used to provide access to flushing assemblies. Constructed of polyethylene.

Valve Box, 7-in. diameter round enclosure

Note: Kits include VB7 valve box enclosure.

VALLEY PRECAST, Inc.

Water & Wastewater
- Systems
- Products
- Service

(719) 395-6764
Fax: (719) 395-3727
Website: http://valleyprecast.com/
Email: frontdesk@valleyprecast.com

28005 County Road 317
P.O. Box 925
Buena Vista, CO 81211

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Traffic & Safety Section

222 South 6th Street, Room 100
Grand Junction, Colorado 81501
(970) 683-6284
Fax: (970) 683-6290

December 31, 2008

Chris Janusz
3642 Highway 82
Glenwood Springs, CO 81601

RE: Proof of Access for 3642, 3644, 3650
State Highway 082A at reference point 3.553 Left

Mr. Janusz:

The purpose of this letter is to provide proof for 3642 and 3644 Hwy 82 that it has access to the State Highway system. The access is off State Highway 82, were CDOT recently added a new traffic signal. The access appears to service three single family home (3642, 3644, 3650 Highway 82). After reviewing our files, CDOT does not have any access permit for this property. However, based upon our conversation, the property appears to have a "grandfathered access". Based upon the State Highway Code (2 CCR 601-1), it states *"grandfathered means a condition that existed prior to June 21, 1979 when section 43-2-147, C.R.S., was first signed into law, or a condition that was legal and conforming to an earlier Code edition or statute, where such conditions and use have not changed since the effective date of the change in law that made the condition non-conforming with current law."* Therefore, the property has legal access since there is no traffic volume change at the property.

It is my understanding that you wish to subdivide your property into 2 different lots. CDOT doesn't have any issues with the possible new subdivision of the property since it will not increase traffic volume by 20%. Therefore, no new permit will be required per the Code.

If you have any additional questions, please contact me.

Sincerely,

Dan Roussin
Region 3 Unit Permit Manager
Daniel.Roussin@dot.state.co.us

Cc: File

ART 7 RESPONCE FROM CHRIS JANUSZ RES

3644 HWY 82 GWS CO 81601

PH 948-2011

1. THERE ARE 3 HOMES ON OUR PRIVATE DRIVE, 3644, 3642 AND 3650. I HAVE OWNED 3644 SINCE 2000, THE OTHER TWO ARE PRIVATLY OWNED AND TOTALY SUPPORT MY IMPROVMENT PROJECT. THE OTHER HOMES ARE TO THE NORTH. TO THE SOUTH IS A LARGE COMMERCIAL PROPERTY WITH A DIFFERENT ACCESS AND THEY ALSO SUPPORT MY IMPROVEMENT.
2. SITE FEATURES - PLEASE SEE H-P-KUMAR SOILS REPORT DATED 4-16-18.
3. SOIL CHARACTISTICS - PLEASE SEE H-P-KUMAR SOILS REPORT DATED 4-16-18
4. GEOLOGY + HAZARD, PLEAS SEE H-P-KUMAR GEOLOGIC REPORT DATED 2-9-09. I HAVE ADDED A LARGE BOULDER WALL FOR PROTECTION.
5. PLEASE SEE ALL SERVICE SEPTIC REPORT DATED 4-17-18. THIS REPORT HAS ALREADY INSTALLED A TOTALY NEW SEPTIC SERVICE FOR THE NEW HOUSE AND THE A.D.U.
6. ENVIRONMENTAL IMPACTS.
   A. LONG TERM. ALLOW NATURAL REGROTH. MINIMAL DAMAGE WAS DONE FOR CONSTRUCTION
   B. RABBITS AND DEER CONTINUE TO USE THE PROPERTY. THEY DO NOT HAVE PERMITS.
   C. DOES NOT APPLY
   D, NONE.
7. NUISANCE. EXCAVATION IS DONE, BACKFILL AND FINISH GRADING WILL BE COMPLETE SOON.

Chris Janusz 7-21-18.

16 May 2018

TO WHOM IT MAY CONCERN

Chris Janusz
3644 HWY 82
Glenwood Springs CO 81601
C 970-948-2011

Janusz ADU Project; Please note the project description has changed from the original in that I am erecting a 28' X 56' full basement home 4' below existing grade. The lower level will be half garage and half ADU. The staff has been informed of this in the past several months.

Item #1 My son Eric Janusz, a licensed and insured building contractor will be assisting me and has full authority to assist me due to my age.

Item #2 We are installing a new OWTS Septic system designed by All Services Septic.

Item #3 This property has been occupied since 1964, therefore the impacts on the land will change only for the ADU.

Item #4 I claimed sole ownership of the mineral rights of this lot on 4 Sept, 2016 after the railroad lawsuit claiming all rights if not secured by others. K+At that time the mineral rights were with the land. My ex-wife Astrid Janusz claimed sole ownership of3642 HWY 82, Glenwood Springs CO 81601 and I claimed sole ownership of 3644 HWY 82, Glenwood Springs CO 81601.

Item # 5 The driveway access at HWY 82 has existed since 1963 , says CDOT letter.

Item #6 I responded incorrectly to a question from your staff and then had to pay a $1700.00 engineering fee for my new OWTS . I would appreciate your help in minimizing requirements in the review because I am simply replacing a 1959 trailer house with a modular house on top of a 700 sq ft ADU and two car garage. Any excess work I have to do creates a financial hardship for me so I would greatly appreciate your help in these matters.

Thank you,

Chris Janusz

16 May 2018

Garfield County

Community Development Department
108 8th Street, Suite 401
Glenwood Springs, CO 81601
(970) 945-8212
www.garfield-county.com

PRE-APPLICATION CONFERENCE SUMMARY

TAX PARCEL NUMBER: 2185-271-34-002 **PRE-APP DATE:** 10/4/17

PROJECT: Janusz Accessory Dwelling Unit (ADU)

OWNER: Chris Janusz

PRACTICAL LOCATION: 3644 Highway 82, Glenwood Springs, CO 81601

ZONING: Residential Urban (RU)

COMPREHENSIVE PLAN: Glenwood Springs, Urban Growth Area

TYPE OF APPLICATION: Administrative Review for Accessory Dwelling Unit

I. GENERAL PROJECT DESCRIPTION

The Applicant is proposing to construct an accessory building on their property on the second floor of a future detached garage. The property is Lot 2 of the Janusz Subdivision Exemption and is 0.726 acres in size. The minimum lot size for the RU Zone District is 7,500 sq.ft. The site meets the minimum lot size for an ADU in the RU Zone which is 15,000 sq.ft. (twice the minimum lot size). The current dwelling on the property is planned to be replaced by a new modular home. The future ADU would be subsequently constructed as part of the construction of the new detached garage.

Details on the ADU have yet to be determined, however, the unit would need to comply with the maximum size limit of 1,500 sq.ft. on lots less than 4 acres. The unit would be served by a shared well and an existing onsite waste water treatment system (OWTS). The OWTS system may need to be upgraded to be adequate to serve the new unit. While the lots is less than the normal required size for a well and OWTS, as an existing lot of record the well and OWTS can be approved. Demonstration of adequate water including legal water, physical water (pump testing) and acceptable water quality (water quality testing) is required. The well proposed to serve the ADU also serves a dwelling unit Lot 1 of the Janusz Subdivision Exemption. Updated well sharing agreements may be required.

Access to the lot and the proposed ADU is existing, by private driveway off of Highway 82. The access is at the County Road 154 signal light. Demonstration of adequate access including driveway widths and grade is required along with confirmation of access permitting with CDOT.

II. SUMMARY OF REGULATORY PROVISIONS REQUIRED TO ADDRESS

- Garfield County Comprehensive Plan 2030 as amended
- Garfield County Land Use and Development Code as amended
  - Article 3, Zoning
    - Rural Zone District - Lot/Building Requirements (Table 3-201) and Use Table (Table 3-403)
  - Article 4, Application and Review Procedures
    - Administrative Review Process (Section 4-103)
    - Common Review Procedures (Section 4-101)
    - Table 4-102 Common Review Procedures and Required Notice
    - Application Materials (Table 4-201 and Section 4-203)
  - Article 7, Standards – Division 1 General Standards, Division 2 General Resource Protection Standards, Division 3 Site Planning – as applicable
    - Additional Standards Applicable to an Accessory Dwelling Unit (Section 7-701 see excerpt below)

7-701. ACCESSORY DWELLING UNIT

A. Maximum Floor Area.
The Floor Area of an ADU shall not exceed 1,500 square feet for a lot less than 4 acres. The Floor Area of an ADU shall not exceed 3,000 square feet for any lot 4 acres or greater.

B. Ownership Restriction.
An ADU is restricted to leasehold interest in the dwelling unit and is for residential or Home Office/Business use only.

C. Compliance with Building Code.
Construction shall comply with the standards set forth in this Code and with Building Code requirements.

D. Minimum Lot Area.
The minimum Lot Size for an ADU is either:

1. 2 acres, or
2. For lots in zone districts with a minimum Lot Size of less than 2 acres, the minimum Lot Size is twice the minimum required Lot Size.

E. Entrance to Dwelling Unit.
A separate entrance to the Accessory Dwelling Unit is required.

III. ADMINISTRATIVE REVIEW PROCESS

The Application will follow the Administrative Review Process contained in Sections 4-101, 4-103 and Table 4-102:

1. Pre-application Conference
2. Submittal of 3 hard copies of the Application along with 1 electronic (pdf) copy.
3. Review by staff for technical completeness.
4. If technically complete the Applicant will be notified and the request scheduled for a decision by the Director.
5. If not technically complete the Applicant will be advised of the deficiencies and has 60 days to correct them.
6. The complete Application is referred to various agencies for comments.
7. A minimum of 15 days prior to the Director's Decision, the Applicant shall complete the public notice mailing by certified mail to adjacent property owners within 200 ft. and certified mail/return receipt requested to mineral rights owners on the property.
8. Staff prepares a report including public and referral comments.
9. The Director's Decision is documented by letter as of the noticed date.
10. The Board of County Commissioners are notified of the decision and have a 10 day call-up period.
11. The Land Use Change Permit is issued after the ten day call-up period has expired and provided no requests for a call-up are received and all conditions of approval have been met.
12. The Applicant has one year to complete all conditions of approval.

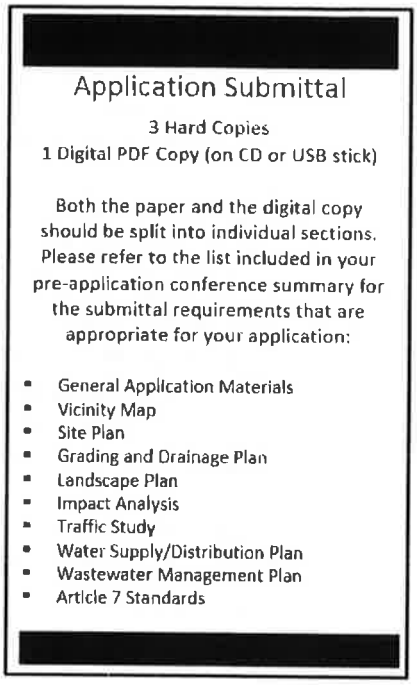
IV. SUMMARY OF SUBMITTAL REQUIREMENTS – KEY TOPICS

The pre-application discussion covered the basic submittal requirements as outlined in the Land Use and Development Code and summarized below:

- General Application Materials (application forms, agreement to pay form, Statement of Authority for Trusts if applicable, authorization to represent, payment of fees etc.)
- Evidence of ownership such as a deed for the property and title work if available
- Narrative description of the proposal
- List of property owners within 200 ft. and any mineral rights owners on the property. Information on how mineral rights research was completed should be provided.
- Vicinity Map (including the area generally within 3 miles of the site)
- Site plan with information on proposed location of the ADU, other existing or proposed structures, and significant features on the property including but not limited to easements, utilities, ditches, streams/water bodies, access roads/driveways, wells, existing and proposed OWTS, and topography.
- Information on grading and drainage needs to be provided or waivers requested.
- Landscaping Plans are not required for ADU's.

- Impact Analysis (waivers may be requested from some sections).
- Information to address applicable sections of Article 7, Division I, II, and III including Standards for ADU's, Comprehensive Plan consistency, information on utilities and geologic hazards such as soils, slopes, and rockfall potential. Application formatting that address each section of Article 7 are recommended
- Information on legal access, physical access, and compliance with Roadway Standards Table 7-107 is required.
- Traffic Study is required however, a waiver may be requested and should include supporting information and justification.
- Water supply plan and supporting documentation (well permits, pump testing, and water quality testing).
- Waste Water Plans and supporting documentation. May include information on the ability to utilize the existing OWTS, plans for a new system if necessary, and copies of existing county permits.
- Development Agreements and Improvements Agreements are not applicable.
- A copy of the current subdivision plat including any plat notes and/or covenants need to be provided.

The Application submittal needs to include 3 hard copies of the entire Application and 1 Digital PDF Copy of the entire Application (on a CD or USB Stick). Both the paper and digital copies should be split into individual sections. Please refer to the pre-application summary for submittal requirements that are appropriate for your Application.



WAIVERS

The Applicant may request waivers from submittal requirements in accordance with Section 4-202 and from Standards in accordance with Section 4-118 of the Land Use and Development Code. Both sections contain review criteria for approval of waivers which need to be addressed in the application submittals. A follow-up discussion with Staff on anticipated waiver requests can be scheduled.

V. APPLICATION REVIEW

a. Review by: Staff for completeness recommendation and referral agencies for additional technical review

b. Public Hearing:

_X_ Director (not a public hearing but notice is required)
___ Planning Commission
___ Board of County Commissioners
___ Board of Adjustment

c. Anticipated Referral Agencies may include but are not limited to:

County Road and Bridge, CDOT, County Consulting Engineer, County Attorney, Fire Protection District, County Environmental Health Department, County Vegetation Manager, County Building Department, Colorado Division of Water Resources, CDPHE Water Quality Division.

VI. APPLICATION REVIEW FEES

a. Planning Review Fees: $ 250.00

b. Referral Agency Fees: $ na (may be billed separately)

c. Total Deposit: $ 250.00 (additional hours are billed at $ 40.50 /hour)

VII. GENERAL APPLICATION PROCESSING

Planner reviews the case for completeness and sends to referral agencies for comments. Planner will contact the Applicant and set up a site visit. Planning Staff reviews application to determine if it meets standards of review. Planner makes a recommendation of approval, approval with conditions, or denial to the appropriate hearing body which in the case of Administrative review is the Director of the Community Development Department.

VIII. DISCLAIMER

The foregoing summary is advisory in nature only and is not binding on the County. The summary is based on current zoning, which is subject to change in the future, and upon factual representations that may or may not be accurate. This summary does not create a legal or vested right and is good for a period of six months, after which an update should be requested.

IX. APPLICATION SUBMITTAL – PUBLIC INFORMATION

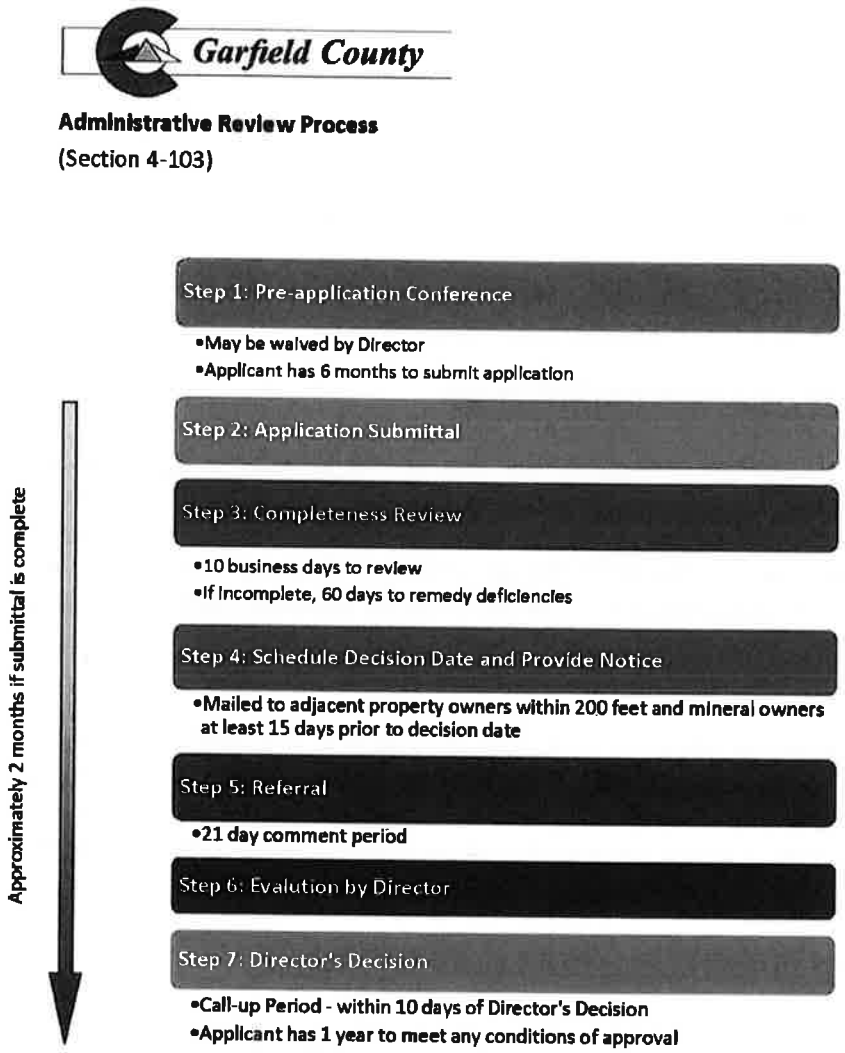
The Applicant is advised that the Application submittal once accepted by the County becomes public information and will be available (including electronically) for review by the public. Proprietary information can be redacted from documents prior to submittal.

PRE-APPLICATION SUMMARY PREPARED BY:

Glenn Hartmann
Senior Planner

10/12/17
Date

A. Section 4-103 Administrative



Garfield County

MEMORANDUM

TO: Staff

FROM: County Attorney's Office

DATE: June 24, 2014

RE: Mineral Interest Research

Mineral interests may be severed from surface right interests in real property. Colorado revised statute 24-65.5-103 requires notification to mineral owners when a landowner applies for a land use designation by a local government. As such, the landowner must research the current owners of mineral interests for the property.

The Garfield County Land Use and Development Code of 2013 ("LUDC") Section 4-101(E)(1)(b)(4) requires written notice to owners of mineral interests in the subject property "as such owners can be identified through the records in the office of the Clerk and Recorder or Assessor, or through other means."

It is the duty of the applicant to notify mineral interest owners. The following is a suggested process to research mineral interests:

1. Review the current ownership deed for the property (i.e. Warranty Deed, Special Warranty, Quit Claim Deed or Bargain and Sale Deed—NOT a Deed of Trust). The ownership deed is usually one or two pages. Is there a reservation of mineral interests on the ownership deed? Are there any exceptions to title? A deed may include a list of reservations that reference mineral owners or oil and gas leases.

2. Review your title insurance policy. Are there exceptions to title listed under Schedule B-II? If so, review for mineral interests that were reserved and oil and gas leases.

3. Check with the Assessor's office to determine if a mineral interest has been reserved from the subject property. The Assessor's office no longer documents the mineral reservation ownership for its tax roll records unless ownership has been proven. There are only a limited number of mineral owners who have provided such information to the Assessor's office so this may not provide any information, depending on your property.

4. Research the legal description of the subject property with the Clerk and Recorder's computer. You can search the Section, Township, and Range of the subject property. You may find deeds for mineral interests for the subject property.

5. Research whether a Notice of Mineral Estate Ownership was filed for the subject property. On the Clerk and Recorder's computer, search under Filter (on the right hand side of the screen), General Recordings, Notice of Mineral Estate Ownership for the subject property.

6. If you find mineral interest owners as reservations on your deed, listed in your title insurance policy, from the Assessor's records or the Clerk and Recorder's computer, you need to determine whether these mineral interests were transferred by deed and recorded in the Clerk and Recorder's office.

7. Enter the name of the mineral interest owner as the Grantor in the Clerk and Recorder's computer to see if the mineral interest was transferred. If you find a transfer deed, you need to repeat this process to follow any transfer of the mineral interest to present day.

8. Include a description of your research process in your application and the name(s) and address(es) of the current mineral interest owner(s).

Mineral interest research can be a difficult and time consuming process. If you are unable to determine mineral rights ownership by yourself, consider hiring an attorney or landman. Attorneys and landmen specialize in determining mineral rights ownership, but they charge a fee for their services.

Garfield County

PAYMENT AGREEMENT FORM

GARFIELD COUNTY ("COUNTY") and Property Owner ("APPLICANT") CHRIS JANUSZ agree as follows:

1. The Applicant has submitted to the County an application for the following Project: 3644 HWY 82 GWS CO 81601.

2. The Applicant understands and agrees that Garfield County Resolution No. 2014-60, as amended, establishes a fee schedule for each type application, and the guidelines for the administration of the fee structure.

3. The Applicant and the County agree that because of the size, nature or scope of the proposed project, it is not possible at this time to ascertain the full extent of the costs involved in processing the application. The Applicant agrees to make payment of the Base Fee, established for the Project, and to thereafter permit additional costs to be billed to the Applicant. The Applicant agrees to make additional payments upon notification by the County, when they are necessary, as costs are incurred.

4. The Base Fee shall be in addition to and exclusive of any cost for publication or cost of consulting service determined necessary by the Board of County Commissioners for the consideration of an application or additional County staff time or expense not covered by the Base Fee. If actual recorded costs exceed the initial Base Fee, the Applicant shall pay additional billings to the County to reimburse the County for the processing of the Project. The Applicant acknowledges that all billing shall be paid prior to the final consideration by the County of any Land Use Change or Division of Land.

I hereby agree to pay all fees related to this application:

Billing Contact Person: CHRIS JANUSZ Phone: (970) 948-2011

Billing Contact Address: 3644 HWY 82

City: GWS State: CO Zip Code: 81601

Billing Contact Email: CMJANUSZ123@GMAIL.COM

Printed Name of Person Authorized to Sign: CHRIS JANUSZ

Chris Janusz (Signature) 5-9-18 (Date)

Reception#: 888030
01/23/2017 02:46:37 PM Jean Alberico
1 of 2 Rec Fee:$18.00 Doc Fee:0.00 GARFIELD COUNTY CO

QUITCLAIM DEED

THIS DEED is dated 14 January, 2017, and is made between Christopher M. Janusz, an unmarried man and Astrid B. Janusz an unmarried woman. (whether one, or more than one), the "Grantor", of the *2185-271-34-002 County of Orange and State of California, and Christopher M. Janusz, an unmarried man (whether one, or more than one), the "Grantee," whose legal address is 36444 Highway 82 of the 771770 County of Garfield and State of Colorado.

WITNESS, that the Grantor, for and in consideration of the sum of Ten and no/xx DOLLARS, ($ 10 –), the receipt and sufficiency of which is hereby acknowledged, does hereby remise, release, sell and QUITCLAIM unto the Grantee, and the Grantee's heirs and assigns, forever, all the right, title, interest, claim and demand which the Grantor has in and to the real property, together with any improvements thereon, located in the County of Garfield and State of Colorado, described as follows:

Section: 27 Township: 6 Range: 89 Lot: 2 Janusz exemption per plat Reception number 771770

also known by street address as: 36444 Highway 82
and assessor's schedule or parcel number: 2185-271-34-002

TO HAVE AND TO HOLD the same, together with all and singular the appurtenances and privileges thereunto belonging, or in anywise thereunto appertaining, and all the estate, right, title, interest and claim whatsoever of the Grantor, either in law or equity, to the only proper use, benefit and behoof of the Grantee, and the Grantee's heirs and assigns, forever.

IN WITNESS WHEREOF, the Grantor has executed this deed on the date set forth above.

Christopher M. Janusz _____

_____ _____

_____ _____

*Insert "City and" if applicable.

Reception#: 888030
01/23/2017 02:46:37 PM Jean Alberico
2 of 2 Rec Fee:$18.00 Doc Fee:0.00 GARFIELD COUNTY CO

STATE OF CALIFORNIA)
) ss.
County of ORANGE)

The foregoing instrument was acknowledged before me this 14 day of JANUARY, 2017, by CHRISTOPHER M. JANUSZ + ASTRID B. JANUSZ.

VIRGINIA LYNN KENDALL
COMM. #2154662
Notary Public - California
Orange County
My Comm. Expires June 20, 2020

Witness my hand and official seal.

Virginia Lynn Kendall, Notary Public
Notary Public
My commission expires: June 20, 2020

Name and Address of Person Creating Newly Created Legal Description (§ 38-35-106.5, C.R.S.)

The Title Company of the Rockies

1620 Grand Avenue
Bldg Main Floor 1
Glenwood Springs, CO 81601
PHONE: 970-945-1169 FAX: 844-269-2759

SELLERS SETTLEMENT STATEMENT

CASE NO.: **0600385**

SETTLEMENT DATE: **May 31, 2016**
DATE OF PRORATION: **May 31, 2016**
PROPERTY ADDRESS: **3642 Highway 82**
Glenwood Springs, CO 81601
SELLER: **Christopher M. Janusz and Astrid B. Janusz**
PURCHASER: **Katherine R. Mac**

LEGAL DESCRIPTION: **LOT 1, JANUSZ EXEMPTION PLAT,**
Garfield County, CO

DESCRIPTION	DEBIT	CREDIT
Sale Price of Property		$317,500.00
Title - Closing Fee to Title Company of the Rockies	$125.00	
Title - Owner's Title Insurance $[redacted] to Title Company of the Rockies	$1,057.00	
Title - Owner - Standard Deletions End to Title Company of the Rockies	$75.00	
Real Estate Commission - Listing to Coldwell Banker Mason Morse	$7,937.50	
Real Estate Commission - Selling to Coldwell Banker Mason Morse	$7,937.50	
Title - Delivery Fee to Title Company of the Rockies	$50.00	
Payoff of First Mortgage Loan to Wells Fargo Bank NA	$113,140.00	
Transfer Fee to Thompson Glen Ditch Company	$100.00	
Wire fee to Title Company of the Rockies	$30.00	
Funds to Astrid to Astrid B. Janusz	$93,309.44	
Funds to Christopher to Christopher M. Janusz	$93,309.44	
County Property Taxes 1/1/2016 thru 5/30/2016	$429.12	
Sub-totals	$317,500.00	$317,500.00
Due To Seller		
TOTALS	$317,500.00	$317,500.00

APPROVED AND ACCEPTED

Sales or use taxes on personal property not included. THE TITLE COMPANY OF THE ROCKIES assumes no responsibility for the adjustment of special taxes or assessments unless they are shown on the Treasurer's Certificate of Taxes Due. The condition of title to the property is to be determined by reference to the title evidence provided by Seller or by personal investigation. The above statement of settlement is approved as of the settlement date shown above and The Title Company of the Rockies is hereby authorized to disburse funds as indicated herein.

Seller

Christopher M. Janusz

Astrid B. Janusz

Coldwell Banker Mason Morse

Broker/Agent
Jerome Whalen

Closing Agent
The Title Company of the Rockies

CHRIS JANUSZ - OWNER
3644 HWY 82
GWS CO 81601
970-948-2011

4-19-18

I AM PURCHASING A 28'X56' MODULAR HOME AND INSTALLING IT ON A FULL BASEMENT, HALF OF WHICH WILL BE A 1BED A.D.U. AND THE OTHER HAVE WILL BE A 2CAR GARAGE.

THE PROPERTY COMPLIES WITH ALL GARFEILD BUILDING REQUIREMENTS WITH DOCUMENTATION AVAILABLE UPON REQUEST.

I ALSO AM BUILDING ANEW (OWTS) DESIGNED BY CARLA OSTBERG OF CBO INC.

THANK YOU

Chris Janusz

CHRIS JANUSZ

Garfield County Land Explorer

Parcel	Physical Address	Owner	Account Num	Mailing Address
218523300960	Not available GLENWOOD SPRINGS	BUREAU OF LAND MANAGEMENT	R060096	2300 RIVER FRONTAGE ROAD SILT, CO 81652
218526200004	3710 82 HWY GLENWOOD SPRINGS	VCP I LLC	R060048	344 CORYELL RIDGE RD GLENWOOD SPRINGS, CO 81601-9669
218527100019	3650 82 HWY GLENWOOD SPRINGS	BACKE, RICHARD JR	R060001	3650 HIGHWAY 82 GLENWOOD SPRINGS, CO 81601
218527100029	3637 82 HWY GLENWOOD SPRINGS	PARTNERS III LLC	R060039	75 BUCKSKIN DRIVE CARBONDALE, CO 81623
218527134001	3642-003644 82 HWY GLENWOOD SPRINGS	MAC, KATHERINE R	R083691	3642 HIGHWAY 82 GLENWOOD SPRINGS, CO 81601
218527134002	3642-003644 82 HWY GLENWOOD SPRINGS	JANUSZ, CHRISTOPHER M	R083692	3644 HIGHWAY 82 GLENWOOD SPRINGS, CO 81601
ROW	Not available null			
ROW	Not available null			
ROW	Not available null			
ROW	Not available null			
ROW	Not available null			

9

STANDARD BACTERIOLOGICAL WATER TEST
ASPEN CONSOLIDATED SANITATION DISTRICT
0400 SERVICE CENTER DRIVE
ASPEN, COLORADO 81611
(970) 925-7262, Ext. 109

PWS ID # ____ Sample Location ____

SAMPLE TAKEN: DATE 4/10/18 TIME 11:15 am NAME OF SUPPLY Well

COUNTY Garfield SAMPLER Ezra CHLORINE RESIDUAL ____ MG/L

( ) COMMUNITY SUPPLY ( ) ROUTINE DISTRIBUTION SYSTEM SUPPLY
( ) NON COMMUNITY ( ) CHECK SAMPLE ( ) PROCESS WATER
( ) OTHER PUBLIC ( ) RAW (X) GROUND ( ) SURFACE
(X) PRIVATE ( ) SPECIAL PURPOSE SAMPLE

NOTE: IF ALL INFORMATION IS NOT SUPPLIED, THE SAMPLE WILL BE DISCARDED.

REMARKS:

RETURN TO Samuelson Pump Co

ADDRESS PO Box 397

CITY-STATE Glenwood Springs CO 81602

PHONE Please Fax 947-9445

– SEE INSTRUCTIONS ON BACK PAGE –

SEE REVERSE FOR TIME LIMITATIONS, SAMPLING INSTRUCTIONS AND DEFINITIONS.

GFP 7/2013

Analyst DAF

UNSUITABLE FOR TEST ☐ SPC

RESULTS

MEMBRANE FILTER / COLILERT (circled)	
DIRECT COUNT:	COLONIES
ADJUSTED COUNT:	COLONIES/100ML
TOTAL COLIFORM: ABSENT (circled)	PRESENT
FECAL COLIFORM: ABSENT (circled)	PRESENT
MEDIA	
LTB 24	
LTB 48	
BGB	
MPN	COLIFORM/100ML

PRESENCE OF COLIFORMS INDICATE NON-COMPLIANCE WITH MINIMUM DRINKING WATER STANDARDS.

☐ Compliance ☐ Non-Compliance ☐ Invalid

DO NOT WRITE IN THIS SPACE

DATE 4/10/18 TIME 12:00p RECEIVED

DATE 4/10/18 TIME 1:00p ON TEST

(1)

E-Filed

Colorado Secretary of State
Date and Time: 09/04/2016 11:41 AM
ID Number: 20141584637

Document number: 20161604542
Amount Paid: $10.00

Document must be filed electronically.
Paper documents are not accepted.
Fees & forms are subject to change.
For more information or to print copies
of filed documents, visit www.sos.state.co.us.

ABOVE SPACE FOR OFFICE USE ONLY

Periodic Report

filed pursuant to §7 90 301, et seq. and §7 90 501 of the Colorado Revised Statutes (C.R.S)

ID number: 20141584637

Entity name: Chris Janusz Minerals, LLC

Jurisdiction under the law of which the entity was formed or registered: Colorado

1. Principal office street address:
3644 Highway 82 *(Street name and number)*
Glenwood Springs *(City)* CO *(State)* 81601 *(Postal/Zip Code)*
(Province – if applicable) United States *(Country – if not US)*

2. Principal office mailing address: (if different from above)
(Street name and number or Post Office Box information)
(City) *(State)* *(Postal/Zip Code)*
(Province – if applicable) *(Country – if not US)*

3. Registered agent name: (if an individual) Janusz *(Last)* Christopher *(First)* M. *(Middle)* *(Suffix)*

or (if a business organization)

4. The person identified above as registered agent has consented to being so appointed.

5. Registered agent street address:
3644 Highway 82 *(Street name and number)*
Glenwood Springs *(City)* CO *(State)* 81601 *(Postal/Zip Code)*

6. Registered agent mailing address: (if different from above)
(Street name and number or Post Office Box information)
(City) *(State)* *(Postal/Zip Code)*
(Province – if applicable) *(Country – if not US)*

Notice:
Causing this document to be delivered to the secretary of state for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the secretary of state, whether or not such individual is named in the document as one who has caused it to be delivered.

7. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing:

Janusz	Astrid	B	
(Last)	*(First)*	*(Middle)*	*(Suffix)*

3642 Highway 82
(Street name and number or Post Office Box information)

Glenwood Springs	CO	81601
(City)	*(State)*	*(Postal/Zip Code)*

	United States
(Province – if applicable)	*(Country – if not US)*

(The document need not state the true name and address of more than one individual. However, if you wish to state the name and address of any additional individuals causing the document to be delivered for filing, mark this box ☐ *and include an attachment stating the name and address of such individuals.)*

Disclaimer:
This form, and any related instructions, are not intended to provide legal, business or tax advice, and are offered as a public service without representation or warranty. While this form is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form. Questions should be addressed to the user's attorney.

Gmail

A Janusz <ajanusz223@gmail.com>

Receipt

Colorado Department of State <business@sos.state.co.us>
To: ajanusz223@gmail.com

Sun, Sep 4, 2016 at 10:43 AM

Colorado Secretary of State
File Report receipt

www.sos.state.co.us

Thank you for using our online services. Here is the receipt for your transaction.

Name	Chris Janusz Minerals, LLC
ID number	20141584637
Document number	20161604542
Payment type	CREDIT
Last 4 digits	2680
Amount paid	$10.00
Date and time	09/04/2016 11:41 AM

Colorado Secretary of State | Business Organizations | 303-894-2200, option 2 | business@sos.state.co.us

T 6

Form No. GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

1095

WELL PERMIT NUMBER 13563 - A
DIV. 5 WD 38 DES. BASIN MD

Lot: 1 & 2 Block: Filing: Subdiv: JANUSZ EXEMPTION

APPLICANT

CHRISTOPHER M & ASTRID B JANUSZ
3642 HIGHWAY 82
GLENWOOD SPRINGS, CO 81601-

(970) 948-2011

APPROVED WELL LOCATION
GARFIELD COUNTY
NE 1/4 NE 1/4 Section 27
Township 6 S Range 89 W Sixth P.M.

DISTANCES FROM SECTION LINES
Ft. from Section Line
Ft. from Section Line

UTM COORDINATES (Meters,Zone:13,NAD83)
Easting: Northing:

PERMIT TO CONSTRUCT A WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not ensure that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
3) Approved pursuant to CRS 37-92-602(3)(c) for the relocation of an existing well, permit no. 13563. The old well must be plugged in accordance with Rule 16 of the Water Well Construction Rules within ninety-one (91) days of completion of the new well. The enclosed Well Abandonment Report form must be completed and submitted to affirm that the old well was plugged.
4) Approved as a well on a residential site(s) of 1.37 acre(s) described as lots 1 & 2, Janusz Exemption, Garfield County. Further identified as 3642 and 3644 Highway 82, Glenwood Springs, CO 81601.
5) The use of ground water from this well is limited to fire protection, ordinary household purposes inside not more than two (2) single family dwellings, the watering of poultry, domestic animals and the irrigation of not more than 1,000 square feet of home gardens and lawns.
6) The pumping rate of this well shall not exceed 30 GPM.
7) Pursuant to Rule 6.2.3 of the Water Well Construction Rules, the well construction contractor shall submit the as-built well location on work reports required by Rule 17.3 within 60 days of completion of the well. The measured location must be accurate to 200 feet of the actual location. The location information must include a GPS location (UTM coordinates) pursuant to the Division of Water Resources' guidelines.

NOTE: Parcel Identification Number (PIN): 23-2185-271-00-027
NOTE: Assessor Tax Schedule Number: R060015

05/14/2015

APPROVED
DMW

Dick Wolfe
State Engineer

By

Receipt No. 9503963 DATE ISSUED 05-14-2015 EXPIRATION DATE 05-14-2017

Reception#: 855899
11/12/2014 03:21:13 PM Jean Alberico
1 of 8 Rec Fee:$46.00 Doc Fee:0.00 GARFIELD COUNTY CO

WELL SHARING COVENANT

THIS WELL SHARING COVENANT ("**Covenant**") is made and effective as of the 31st day of October, 2014.

RECITALS

This Covenant is made with reference to the following facts:

A. Christopher Janusz and Astrid Janusz (collectively, "Januszes") own two parcels of adjacent real property located in Garfield County, Colorado referred to, depicted and described as Lot 1 and Lot 2 on that certain Janusz Exemption Plat recorded in the Clerk and Recorder's Office of Garfield County, Colorado on July 20, 2009 as Reception No. 771770 ("Plat"). Lot 1 and Lot 2 are collectively referred to in this Agreement as the "Lots." The term "Lot" refers without specification to Lot 1 and/or Lot 2 individually.

B. Janusz is the holder of Well Permit No. 13563 (the "Well Permit") issued by the Colorado Department of Natural Resources, Office of the State Engineer. The Well Permit allows a total maximum pumping rate of 30 g.p.m. and limits the uses of the water produced by the well permitted under Well Permit (the "Well") to ordinary household purposes inside two single family dwellings, the irrigation of 1,000 square feet of lawn and garden, and watering of domestic animals.

C. The Well is constructed on and operates from Lot 1.

D. The water produced by the Well is used for the permitted purposes under the Well Permit on the Lots as of the effective date of this Covenant.

E. Janusz wishes to memorialize certain rights and restrictions appurtenant to the Lots concerning the use, maintenance, repair and/or improvement of the Well and related pipelines and equipment.

F. Janusz desires that the appurtenant rights and restrictions set forth in this Covenant be deemed a covenant running with the land.

COVENANT

1. Physical Infrastructure and Grant of Easement.

   a. The Well has been drilled and is operating on Lot 1 and buried delivery pipes have been installed from the Well to the dwellings on Lot 1 and Lot 2 constructed and in place as of the effective date of this Covenant.

b. Janusz hereby makes, establishes, grants and reserves for themselves and for theirs successors and assigns of the Lots a nonexclusive perpetual easement (the "Easement") upon, over, across and beneath the Lots at the location depicted on Exhibit A and described as "Well Easement," which Exhibit is attached hereto and incorporated herein by this reference, for the limited purposes of using, maintaining, repairing, or replacing or improving the Well, delivery pipes, pump, and associated physical improvements. The owner of Lot 2 also may use the Easement for the purposes of transporting persons and equipment to the Well to carry out the limited purposes of the Easement.

2. Authorized Use of the Well. The continued use of the Well on the Lots shall be limited to the uses allowed by the Well Permit. Upon the conveyance of title to a Lot, the owners of the Lots subsequent to such title conveyance shall cause the Well Permit to be amended with the Office of the State Engineer to reflect that the Well is owned by the owners of the Lots subsequent to such title conveyance.

3. Percentage Allotment of Total Well Production. For so long as the Lots are sharing the Well, each Lot shall be entitled to an equal one-half (1/2) share of the total water flow produced by the Well ("Well Yield"). Well Yield shall be measured in gallons per minute (g.p.m.). In any event, the total Well Yield shall not exceed 30 g.p.m., in compliance with the terms of the Well Permit. Any deficiency in production of the Well below 30 g.p.m. shall be allocated equally between the Lots.

4. Conservation. No Lot owner may waste water, and each owner shall exercise prudence and conservation in the use of water to allow for efficient and beneficial use of the Well and to avoid undue burden on the Well pump.

5. Cost of Repair, Maintenance and Improvements. From time to time the Well, delivery pipes, and associated facilities will require repair, maintenance and improvements. For so long as the Lots are sharing the Well, the cost of any such repair, maintenance and improvements shall be allocated as follows:

a. The cost of any repair, maintenance or improvement to the Well or the delivery pipes that benefits both Lot 1 and Lot 2 shall be allocated equally between the Lots; and

b. The cost of any repair, maintenance or improvement that benefits only one Lot shall be allocated to the benefitted Lot only; and

c. Any portion of the Easement that is disturbed while the Easement is being used for the purposes for which the Easement has been granted shall be promptly

compacted and revegetated, including replacement of trees of the same size and type, grasses and other landscaping, as applicable, with costs for such remediation allocated to the Lot for which the work was undertaken. The owner of Lot 1 shall not install vegetation within the Easement that unreasonably interferes with the rights of the owner of Lot 2 to use the Easement for the purposes for which it has been granted.

6. Authority to Perform Repairs, Maintenance and Improvements. If the owner of either Lot reasonably believes that the Well or Well pump requires repair, replacement or maintenance to allow such owner to be able to reliably pump its proportionate share of the maximum Well Yield, then such owner shall provide the other Lot owner written notice of such fact and the estimated cost of the necessary repairs. Following such notice, the Lot owners shall cooperate for the purposes of entering into agreements relating to the required repair, replacement or maintenance and for payment of the costs therefor. If the Lot owners fail to reach an agreement regarding the work that is subject of the notice within fifteen (15) days of receipt of the notice, then the Lot owner providing the notice may independently cause the work to be performed by a licensed well or pump contractor and shall be entitled to reimbursement from the other Lot owner for such work in accordance with Paragraph 9 below and subject to Paragraph 5 above. In the event that emergency repairs or maintenance is required, to the degree practical, the Lot owner initiating the emergency repairs or maintenance will provide reasonable verbal or written notice to the other Lot owner prior to any such emergency repairs or maintenance.

7. Costs of Electric Charges. The owner of Lot 2 shall pay to the electricity provider the electric charges attributable to operation of the Well pump. The owner of Lot 1 shall pay monthly to the owner of Lot 2, no later than the fifth day of the month, the amount of fifteen and no/100 Dollars ($15.00) without notice or demand by the owner of Lot 2. Such payment shall be reasonable compensation to the owner of Lot 2 for that owner's payment of such electrical charges. The owner of Lot 1 may prepay such monthly payments to the extent that such owner chooses. Three years after the effective date of this Covenant, and every third year thereafter, such monthly payment shall increase by 10%. In the event that the owner of Lot 1 prepays any amounts and conveys title to Lot 1 before enjoying the benefits of the pump for a month for which prepayment has been made, such owner shall be entitled to a refund for the applicable prepayment.

8. Regulatory Compliance. In the event that any government or judicial authority imposes future requirements or restrictions on the use of the Well, the Lot owners shall comply with such requirements to help ensure supply of water to the Lots. The Lot owners shall equally share the costs associated with such compliance.

eption#: 855899
12/2014 03:21:13 PM Jean Alberico
of 8 Rec Fee:$46.00 Doc Fee:0.00 GARFIELD COUNTY CO

9. Payment Terms. Any payment due by one Lot owner to the other Lot owner under this Covenant, including any payment agreement reached hereunder, shall be payable in full within thirty (30) days of a Lot owner's receipt of notice regarding such due payment. If payment is not received by said due date, the Lot owner to whom payment is owed may file a lien for the amount owed against the Lot owned by the owner failing to make timely payment. Said lien shall be perfected by recording in the real property records of Garfield County (a) an accounting of the amount due; (b) a description of the Lot to be charged with such lien sufficient for its proper identification; and (c) a verification by affidavit. Said lien may be foreclosed in any manner provided for by law.

10. Storage. Should a Lot owner's share of the Well Yield be insufficient to adequately service the reasonable needs of the owner's Lot, then such owner may construct, on the owner's own Lot, at such Lot owner's sole expense, a water storage facility to store that Lot owner's allocated portion of the Well Yield. Alternatively, the Lot owners may agree to construct, own and operate a joint water storage facility, in which case this Covenant shall be amended to set forth the terms and conditions of the construction, ownership and operation of such joint storage facility.

11. New Well. In the event that a Lot owner's share of the Well Yield is insufficient to adequately service the reasonable needs of the owner's Lot, then such owner may, but is not required to, construct on the owner's own Lot, at such owner's sole expense, as permitted by law, a new well to supply water only to that owner's Lot. In the event that a Lot owner constructs a new well, such owner shall have a licensed plumber plug the historic connection between all structures on the owner's Lot and the Well so that water from the Well can no longer be delivered or used on that owner's Lot. Upon connection of a new well to the structures it is intended to serve and plugging of the historic connection to the Well from the newly connected structures, the Lot owners shall repeal and terminate this Covenant. Any such repeal and termination must be consented to in writing by any party holding a lien on a Lot.

12. Well Failure. In the event that the Well should ever run dry or fail for any reason, the Lot owners may either redrill the Well or drill a new well. In the event that the Lot owners cannot agree on the proper remedy for a well failure, the Lot owners shall mutually select a nonbiased third-party with experience in well drilling who shall render a decision that will be binding on the Lot owners. In the event the Well is redrilled, or a new well is drilled, this Covenant shall be amended to reflect any change in the terms of the Well Permit or the terms of a new well permit.

13. Indemnification. To the extent permitted by applicable law, each Lot owner (each an "indemnifying owner") shall indemnify, defend and hold the other Lot owner (each an "indemnified owner") harmless from and against all losses, claims, demands, liabilities, injuries, damages and expenses, including, without limitation, reasonable attorneys' fees and court costs, that an indemnified owner may suffer or incur as a result of the use, occupancy and possession of the Easement by the indemnifying owner, its agents, visitors, invitees, licensees, successors and assigns or by reason of breach of this Covenant.

14. No Public Dedication. Nothing contained in this Covenant will be deemed to be a dedication of any portion of the Easement to or for the general public or for any public purpose whatsoever; it being the intent of Janusz that the Easement is and shall continue to be private.

15. Covenant Running With the Land. Each provision of this Covenant, and any agreement, promise, covenant and undertaking to comply with each provision of the Covenant are related to and touch and concern the land comprising the Lots. As such, this Covenant shall be deemed a covenant running with the land and shall be a burden upon the title to the Lots for the benefit of each Lot. A Lot owner's rights and obligations under this Covenant may not be conveyed separately from title to the owner's Lot, and the conveyance of title to a Lot shall automatically convey the rights and obligations under this Covenant of the Lot owner making such conveyance. As such, if any Lot owner conveys all of its interest in a Lot, such Lot owner shall thereupon be released and discharged from any and all obligations arising under this Covenant after the conveyance of title, but such Lot owner shall remain liable for all obligations arising under this Covenant prior to the conveyance of title. Anyone who acquires title to a Lot (including, without limitation, anyone who acquires its interest by foreclosure, trustee sale or otherwise) shall be liable for all obligations arising under this Covenant after the date that such person or entity acquires title to a Lot.

16. Non-Merger of Easement. Irrespective of the ownership of the Lots, the Easement created by this Covenant shall not be deemed to have merged into the title of either Lot.

17. Remedies. In the event of any violation or threatened violation by any Lot owner of any of the provisions of this Covenant, the owner not in violation shall have the right to enjoin such violation or threatened violation by proceeding in the District Court of Garfield County. The right of injunction shall be in addition to all other remedies set forth in this Covenant or as provided by law.

18. Waiver. The failure of a Lot owner to insist upon strict performance of any of the provisions contained in this Covenant shall not be deemed a waiver of any rights or remedies that such owner may have, and shall not be deemed a waiver of any subsequent breach or default of the performance by the other Lot owner of any of the obligations contained in this Covenant.

19. Attorneys' Fees. In the event a Lot owner initiates or defends any legal action or proceeding to enforce or interpret any of the terms of this Covenant, the Lot owner prevailing in any such action or proceeding shall be entitled to recover from the non-prevailing Lot owner in any such action or proceeding its reasonable costs and attorneys' fees, including its reasonable costs and attorneys' fees on any appeal.

20. No Partnership Created. The provisions of this Covenant are not intended to create, nor shall they be in any way interpreted or construed to create, a joint venture, partnership, or any other similar relationship between Lot owners.

21. Estoppel Certificate. Each Lot owner shall, within fifteen (15) days of receipt of written request from the other Lot owner, certify in writing for a prospective purchaser or lienholder that this Covenant is in full force and effect and that the owner requesting such certification is not in default of any of the terms, covenants, conditions, or agreements contained in this Covenant (or, if a default does exist, specifying the nature of such default).

22. Term. This Covenant shall continue in perpetuity, as the same may be amended, unless repealed in accordance with the terms hereof.

23. Notices. All notices to be given hereunder shall be in writing, and may be given, served or made by depositing the same in the United States mail properly addressed, postage prepaid, for delivery by certified mail with return receipt requested, or by delivering the same in person to an owner or the owner's authorized representative. Notice deposited in the mail in accordance with the provisions of this Paragraph 23 shall be effective on the third day following the postmark date of such notice, or when actually received, whichever is earlier.

24. Headings. The headings of the various paragraphs of this Covenant have been inserted for reference only and shall not have the effect of modifying, amending or changing the express terms and provisions of this Covenant.

25. Severability. Invalidity or unenforceability of any provision of this Covenant in whole or in part shall not affect the validity or enforceability of any other provision or any valid and enforceable part of a provision of the Covenant.

tion#: 855899
/2014 03:21:13 PM Jean Alberico
8 Rec Fee:$46.00 Doc Fee:0.00 GARFIELD COUNTY CO

26. Recordation: Upon execution by Janusz, this Covenant and any amendments thereto shall be recorded in the records of the Garfield County Clerk and Recorder.

27. Governing Law. This Covenant shall be governed by and construed under Colorado law.

IN WITNESS WHEREOF, Janusz has executed this Covenant as of the effective date.

Christopher Janusz

Astrid Janusz

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

Subscribed and sworn to before me this 31st day of October, 2014, by Christopher Janusz.

(SEAL)

ANGELIQUE PETTERSON
Notary Public
State of Colorado

Notary Public

My commission expires: 1/24/2015

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

Subscribed and sworn to before me this 31st day of October, 2014, by Astrid Janusz.

(SEAL)

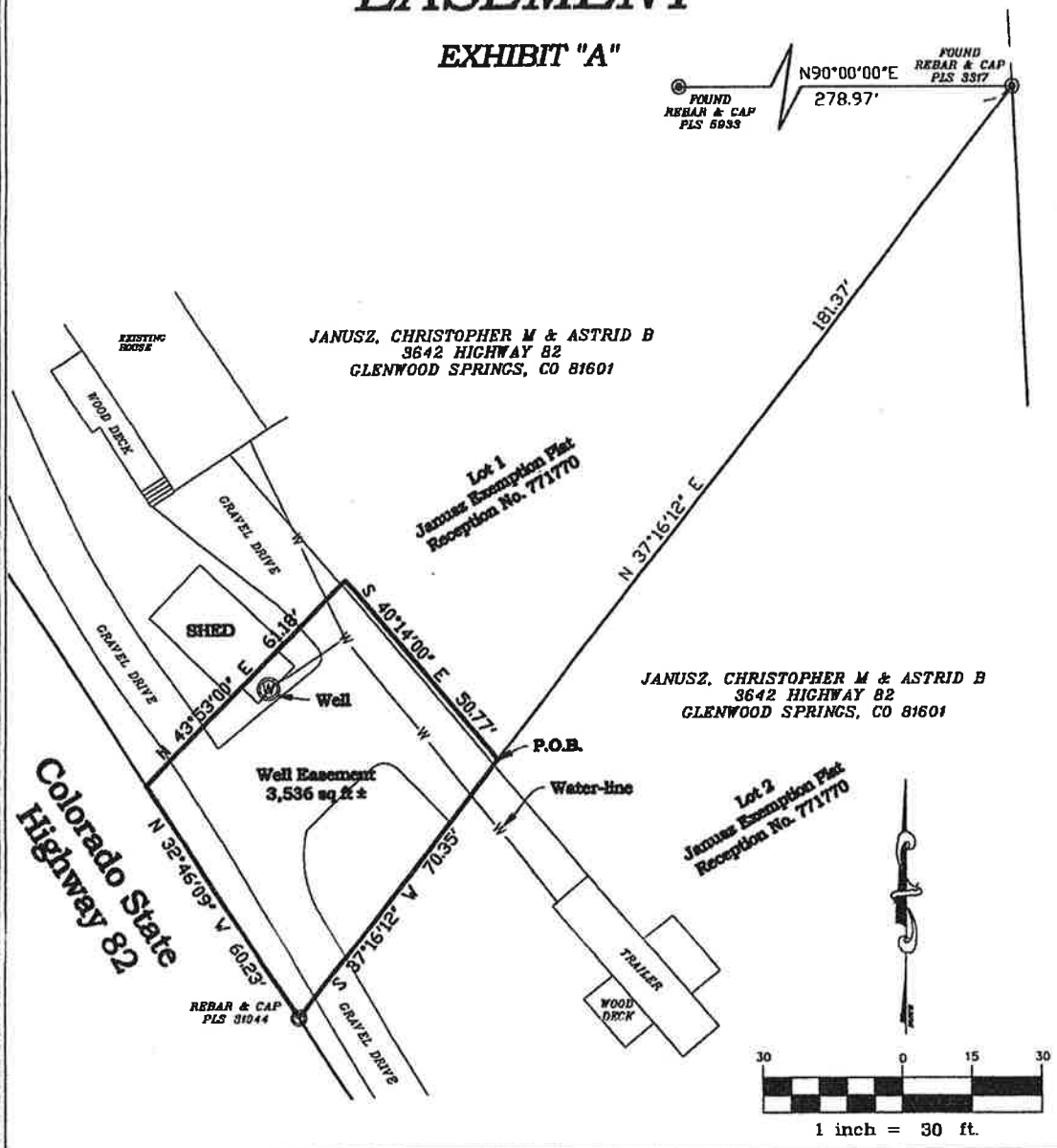
ANGELIQUE PETTERSON
Notary Public
State of Colorado

Notary Public

My commission expires: 1/24/2015

EASEMENT

EXHIBIT "A"



EASEMENT DESCRIPTION

A PARCEL OF LAND FOR THE PURPOSE OF A WELL EASEMENT SITUATE IN THE E1/2NE1/4 OF SECTION 27, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE 6TH P.M., COUNTY OF GARFIELD, STATE OF COLORADO. ALL BEARINGS RELATIVE TO A BEARING OF N90°00'00"E BETWEEN THE NORTHWEST CORNER OF LOT 1, JANUSZ EXEMPTION PLAT , A REBAR AND CAP LS NO. 5933 IN PLACE AND THE NORTHEAST CORNER OF SAID LOT 1, A REBAR AND CAP LS NO. 3317 IN PLACE. SAID EASEMENT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID LOT 1; THENCE S37°16'12"W 181.37 FEET TO A POINT ON THE SOUTHEASTERLY BOUNDARY LINE OF SAID LOT 1, THE TRUE POINT OF BEGINNING ; THENCE ALONG SAID SOUTHEASTERLY BOUNDARY LINE S37°16'12"W 70.35 FEET; THENCE ALONG THE SOUTHWESTERLY BOUNDARY LINE OF SAID LOT 1 N32°46'09"W 60.23 FEET; THENCE DEPARTING SAID SOUTHWESTERLY BOUNDARY LINE N43°53'00"E 61.18 FEET; THENCE S40°14'00"E 50.77 FEET TO THE POINT OF BEGINNING. SAID PARCEL OF LAND CONTAINING 3,536 SQUARE FEET, MORE OR LESS.

Scott R. Blackard P.L.S. 38342

THE SEXTON SURVEY COMPANY
127 E. 5TH STREET
RIFLE CO. 81650
970-625-3711

DATE: 10/13/14
JOB NO.14084 WELL EASE

NOTICE; ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVERED SUCH DEFECT. IN NO EVENT, MAY AN ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

Rev. 03/13

APPLICATION FOR WATER ALLOTMENT CONTRACT
BASALT WATER CONSERVANCY DISTRICT

1. Applicant(s) Contact Information

   a. Name:

   b. Mailing Address:

   c. Street Address:

   d. Telephone Numbers:

   e. Email Address:

   f. If Applicant is represented by an Attorney, please provide the Attorney's contact information, including name, address, telephone, and email:

   g. Emergency Local Contact Information, including name, address, telephone, and email:

   h. Contact Information of property manager, caretaker, irrigator, system operator, or agent who should be provided a copy of this contract, including name, address, telephone, and email:

2. Type of land use (development) proposed for water allotment contract (i.e. single family home, subdivision, gravel pit, etc.):

3. Legal description and address of property on which District's water rights and/or contract water will be used (attach map and vesting deed with proof of ownership)*:

4. Elevation of property: ___ 6–7,000 ft., ___ 7–8,000 ft., ___ 8–9,000 ft.

5. Name and legal description of water supply diversion point(s):

Name of Diversion _____.

Type of Diversion _____ (e.g., a well, spring, ditch, pipeline, etc.)

Legal Description: ___ Quarter, ___ Quarter, Section ___, Township ___ N / S, Range ___ E / W, of the 6th Principal Meridian, at a location _____ feet from the ___ Section line and _____ feet from the ___ Section line.

UTM Coordinates (NAD 83):

Northing: _____.

Easting: _____.

___ Zone 12 / ___ Zone 13.

If diversion point is a well, please provide the Well Permit No. _____.

Is the well operational/active? ___ Yes, ___ No

Is there currently an operating well meter? ___ Yes, ___ No

Notice: A valid well permit with operating well meter will be required under the contract.

6. Legal Water Supply: (please check one)

___ Applicant requests consideration by the District to be included in the District's Umbrella Plan for Augmentation decreed in Case No. 02CW77.*

*Note: Certain applicants may qualify to be included in the District's Umbrella Plan at the District's discretion. In order to be included in the District's Umbrella Plan, the Applicant's depletions must occur within the District's defined "Area A" and the Applicant must

Rev. 06/12

VERIFICATION

STATE OF Colorado)
) ss.
COUNTY OF Garfield)

I, Katherine Mac (name of Applicant or Applicant's duly authorized representative), being first duly sworn, upon oath, depose and state as follows:

1) I am the Applicant or a duly authorized officer, manager, agent or attorney-in-fact for the Applicant for this Application for Water Allotment Contract;
2) I have read and know the contents of this Application;
3) The information contained herein is an accurate and complete description of the Applicant's intended use of the Basalt Water Conservancy District's water rights;
4) The Applicant acknowledges that the accuracy and truth of all statements in this Application are conditions of approval of this Application by the Basalt Water Conservancy District and of the Contract to be made pursuant to such approval; and
5) I acknowledge that this application shall be subject to the District's Water Allotment Contract as approved and issued by the District.

Date: 4/6/18

By: _____

Print Name: Katherine Mac

Title: _____

Subscribed and sworn before me this 6 day of April, 2018 by Katherine Mac.

Witness my hand and seal.

_____
Notary Public

My commission expires: 6/6/21

Reception#: 855897
11/12/2014 03:21:13 PM Jean Alberico
1 of 3 Rec Fee $21.00 Doc Fee 0.00 GARFIELD COUNTY CO

QUITCLAIM MINERAL DEED

THIS DEED is dated October 31, 2014, and is made between CHRISTOPHER JANUSZ AND ASTRID JANUSZ (collectively, "Grantor"), and ASTRID JANUSZ MINERALS, LLC, a Colorado limited liability company ("Grantee").

WITNESS, that the Grantor, for and in consideration of the sum of Ten Dollars ($10.00) cash in hand paid and other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby remise, release, sell and QUITCLAIM unto the Grantee, and the Grantee's successors and assign, forever, all the right, title, interest, claim and demand which the Grantor has in and to:

One-half (1/2) of all of the oil, gas, hydrocarbons and other minerals in and under, and that may be produced from, the following described lands situated in Garfield County, State of Colorado:

A parcel of land situated in the E ½ of the NE ¼ of Section 27, Township 6 South, Range 89 West of the 6th P.M., more particularly described as follows:

BEGINNING AT A POINT ON THE EAST LINE OF SAID SECTION 27, WHENCE THE NE CORNER OF SAID SECTION 27 BEARS N2°54'W A DISTANCE OF 1057.83 FEET;
THENCE WEST 289.25 FEET TO THE EASTERN LINE OF THE D & R.G.W. RAILROAD;
THENCE SOUTHERLY 302.5 FEET ALONG THE EASTERLY LINE OF THE D & R.G.W.;
THENCE WEST 85.1 FEET ALONG THE SOUTHERLY LINE OF THE D &: R.G.W. RAILROAD TO THE INTERSECTION WITH THE EASTERLY LINE OF THE D. & R.G.W. RAILROAD;
THENCE S31°26'E 90.25 FEET ALONG THE EASTERLY LINE OF THE D. & R.G.W. RAILROAD TO THE INTERSECTION WITH THE EASTERLY LINE OF STATE HIGHWAY NO. 82;
THENCE S55°00'E 247.8 FEET ALONG THE EASTERLY LINE OF STATE HIGHWAY NO. 82, TO THE INTERSECTION WITH THE EAST LINE OF SAID SECTION 27;
THENCE N2°54'W 481.84 FEET ALONG THE EAST LINE OF SAID SECTION 27 TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM A TRACT OF LAND SITUATED IN THE SE ¼ OF THE NE ¼ OF SECTION 27, TOWNSHIP 6 SOUTH, RANGE 89 WEST OF THE SIXTH PRINCIPAL MERIDIAN AND MORE FULLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NE CORNER OF SAID SE ¼ OF THE NE ¼;

GWS-38 600 FOOT WELL SPACING STATEMENT

I (we) Richard Backe jr state as follows:

1. I (we) own real property described as 3650 Hwy 82, Glenwood Springs, Co in the NE ¼ of the NE ¼, Section 27, Township 6, Range 89, 6 P.M., Garfield County, Colorado. We own the right and easement to the following well:

Permit #	1/4	1/4	Sec.	Twp.	Rng.	Actual Distance from N/S Sec. Line	Actual Distance from E/W Sec. Line
_____	___	___	___	_____	_____	_____ ft.	_____ ft.

2. I (we) have been apprised that Chris Janusz, the present owners of a parcel of land in the NE ¼ of the NE ¼, Section 27, Township 6S, Range 89W, SIXTH P.M., desire to drill a new well or extend the use of an existing well. I (we) also understand that the purpose of such well is set forth in the well permit application, and that I (we) have reviewed the application that was submitted to the State Engineer and receipted by him under receipt no. _____.

3. The proposed location for the subject well will be 600 feet or less from my (our) well.

4. By this statement I (we) am (are) specifically waiving any objection to the issuance of a well permit for the subject well, as set forth in the referenced application, and would request that permit issuance not be postponed or denied because of any concerns by the Division or others that the proposed well will materially affect my (our) well or water right. I (we) am (are) also specifically waiving my (our) right I (we) may have to participate in a hearing before the State Engineer pursuant to Section 37-90-137(2), C.R.S.

Dated this 7 day of April, 2018

Richard Backe

_____

Reception#: 855897
11/12/2014 03:21:13 PM Jean Alberico
1 of 3 Rec Fee $21.00 Doc Fee 0.00 GARFIELD COUNTY CO

THENCE S2°54'E 176.12 FEET ALONG THE EAST LINE OF SAID SE ¼ OF THE NE ¼ TO THE NORTHERLY LINE OF SAID STATE HIGHWAY NO. 82;
THENCE N55°00'W 140 FEET ALONG THE NORTHERLY LINE OF SAID HIGHWAY NO. 82 TO A POINT;
THENCE NORTH 30 FEET TO A POINT AND
THENCE N58°12'E 124.45 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPTING THAT PORTION CONVEYED TO THE COLORADO DEPARTMENT OF HIGHWAYS BY ERNEST L. MACTAVISH IN DOCUMENT RECORDED APRIL 17, 1963 IN BOOK 348 AT PAGE 366 AS RECEPTION NO. 221105.

Also known as Lot 1 and Lot 2 of the Janusz Exempt Subdivision according to the Plat thereof recorded in the Clerk and Recorder's Office of Garfield County, Colorado on July 20, 2009 as Reception No. 771770.

TO HAVE AND TO HOLD the same, together with all and singular the appurtenances and privileges thereunto belonging, or in anywise thereunto appertaining, and all the estate, right, title, interest and claim whatsoever of the Grantor, either in law or in equity, to the only proper use, benefit and behoof of the Grantee, and the Grantee's successors and assigns, forever.

IN WITNESS WHEREOF, the Grantor has executed this deed on the date set forth above.

Christopher Janusz

Astrid Janusz

~Acknowledgments Follow~

Reception#: 855897
11/12/2014 03:21:13 PM Jean Alberico
3 of 3 Rec Fee $21.00 Doc Fee 0.00 GARFIELD COUNTY CO

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

Subscribed and sworn to before me this 31st day of October, 2014, by Christopher Janusz.

(SEAL) ANGELIQUE PETTERSON
Notary Public
State of Colorado

Notary Public

My commission expires: 1/24/2015

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

Subscribed and sworn to before me this 31st day of October, 2014, by Astrid Janusz.

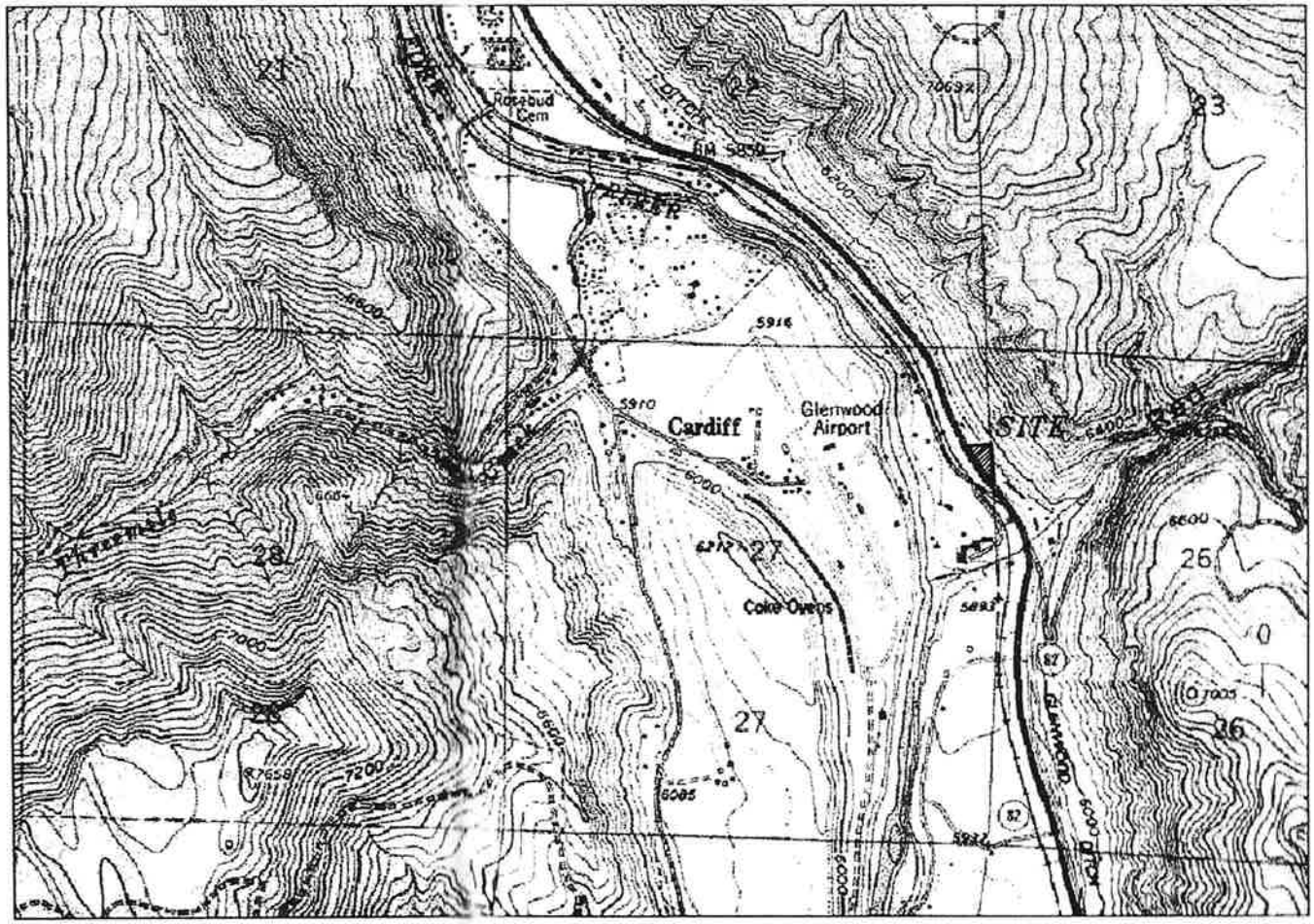
(SEAL) ANGELIQUE PETTERSON
Notary Public
State of Colorado

Notary Public

My commission expires: 1/24/2015

JANUSZ EXEMPTION PLAT

L OF LAND SITUATED IN, SEC. 27, T. 6 S., R. 89 W. OF THE COUNTY OF GARFIELD, STATE OF COLORADO



VICINITY MAP
SCALE 1"=2000'

Garfield County

Community Development Department

May 24, 2018

Chris Janusz
3644 Highway 82
Glenwood Springs, CO 81601

RE: Completeness Review Janusz ADU – GAPA-05-18-8646

Dear Mr. Janusz

Thank you for your application for an Accessory Dwelling Unit located at 3644 Highway 82, Glenwood Springs CO 81601. Our completeness review included input from the County Attorney's Office and has identified several items that need to be addressed or clarified prior to a determination of technical completeness. Please respond to the following items:

Mineral Ownership Issues:

1. Please explain how the mineral research was completed and if the supplied records are the most up-to-date. The Quitclaim Mineral Deed shows half of the minerals are owned by Astrid Janusz Minerals LLC. An address is needed for that company if available.

Site Plan:

2. The Site Plan from 2009 shows a shed in the front yard setback. Please indicate whether or not that shed has been moved or provide a demonstration that the shed complies with required building setbacks.

Grading and Drainage Plan:

3. Staff understands that a Grading and Drainage plan is being required as part of the Building Permit for the single-family residence. If this is the case, a waiver request may be applied for regarding this submittal requirement. Please indicate in the waiver request that the standard is being addressed as part of the building permit process.

Impact Analysis:

4. Please respond to the Impact Analysis Section in 4-203 (G) of the Land Use and Development Code.

Water Plan:

5. Please provide a statement detailing what the water supply plan is for the ADU. The well sharing agreement indicates that only 2-single-family dwelling units may use the well.

6. Please provide the current well permit for the property as well as any application for a new well permit that has been submitted to the Division of Water Resources.

7. Included in the application is an application for a Water Allotment Contract from the Basalt Water Conservancy District, but it is illegible. Please provide a legible version.

8. Please provide a draft copy of the updated well-sharing agreement indicating how the well will be shared between the two lots with the addition of the ADU. Please note that the updated well-sharing agreement will be required to be signed-off on by the adjoining property owner.

9. A water quality test that meets Land Use and Development Code Standards in 4-203-M1b(5)(c) is required as part of the initial submittal. The applicant may request that the water quality test be completed as a Condition of Approval, however this needs to be submitted as part of the application. Staff also recommends that the applicant remove the copy of the check from the application as any submitted information submitted to this department is available to the public.

10. A 4-hour pump test that meets Section 4-203-M1b(5)(a) is required as part of the initial submittal. The applicant may request that the water quantity test be completed as a Condition of Approval, however this needs to be submitted as part of the application..

Article 7 Standards:

11. Please respond to standards fully described in Article 7: Division 1-3 of the Land Use and Development Code.

Access:

12. A traffic study is a required submittal item. Please indicate the estimated Average Daily Trips (ADT) on the road from Highway 82 to the proposed ADU.

13. Based on the traffic study, please provide a demonstration of whether or not the access road from Highway 82 to the proposed ADU meet the standards in Table 7-107 of the Land Use and Development Code. If the road does not meet those standards you may apply for a Waiver pursuant to the attached policy.

14. The application provided a letter from Dan Roussin of CDOT for the Subdivision Exemption in 2008. While not required staff recommends the applicant contact CDOT to discuss the application.

15. The access road appears to cross the property to the southeast. Please provide an access easement for that portion of the road.

Landscape Plan

16. It appears based on the submittal that a Landscape Plan is not required, based on ADU's being exempt from Landscape Standards. Please provide a waiver request for this submittal requirement.

Development & Improvements Agreement:

17. Based on the scope of the application, it does not appear to require a Development or Improvement Agreement. Please supply a waiver request for both of those submittal requirements.

Wastewater Management Plan:

18. It appears, that the new OWTS is designed for 4 bedrooms. Please provide a statement that the ADU is included in this system.

Electronic Copies:

19. The electronic copy does not include all the information included in the hard copies. Please provide an updated electronic copy that includes all submittals.

Once the above topics are addressed, we can finalize our completeness review and schedule a date for the Director's Decision. Please note that the Garfield County Land Use and Development Code requires that the technical completeness issues be resolved within 60-days of the date of this letter. If not resolved in that timeframe, the application will be deemed withdrawn, unless a request for extension is submitted and approved.

Please feel free to call or request a follow-up meeting with staff to address any questions you may have regarding the above items. You may reach me at pwaller@garfield-county.com or 970-945-1377 ext. 1580.

Sincerely,

Patrick Waller
Senior Planner

CHRIS JANUSZ
3644 HWY 82
GWS CO 81601
948-2011

TO PAT WALLER
SENIOR PLANNER AT GCCDD.

DEAR PAT,

IN RESPONCE TO YOUR LETTER ON 5-24-18 AND OUR MEETING ON 5-29-18, I AM ADDRESSING THE ISSUES REQUIRING MORE DOCUMENTATION.

1. MINERAL OWNERSHIP.
BASED ON THE RAILROAD LAWSUIT AROUND 2002 THRU 2006, CLAIMING ALL MINERAL RIGHT UNDER OR ATTACHED TO RAIL ROAD LAND, MY WIFE AND I FOUGHT TO ESTABLISH THAT AS THE OWNERS OF BOTH 3642 + 3644 HWY 82 JANUSZ SUBDIVISION LOTS 1 AND 2, MINERAL RIGHTS HAD ALWAYS STAYED WITH THE LAND. IN 2006, WE, ASTRID AND I CLAIME SOLE, PERSONAL TITLE OF THE MINERAL RIGHT TO THE LAND.
THE ATTACHED DOCUMENT BY THE CO SEC OF STATE DATED 9-4-16 THAT UPON OUR DIVORCE, ASTRID KEPT AND STILL OWNS THE RIGHTS TO 3642 HWY 82, AND I AM THE SOLE OWNER OF 3644 HWY 82 GWS CO 81601.
2. SHED WILL BE REMOVED
3. WILL REQUEST WAIVER IF NECESSARY.

4. IMPACT ANALYSIS IS BEING ADDRESSED BY DAVE ARGO IN YOUR OFFICE

5. EXTRA WATER RIGHTS HAVE BEEN APPLIED FOR FROM THE BASALT WATER DISTRICT. PLEAS RECALL RECOPING APPLICATION AT OUR MEETING.

6. SEE ATTACHED

7. SEE ATTACHED

8. SEE # 5.

9. IN PROGRESS FROM

10. OK AT MEETING

11. THRU 15. I THINK ALL OK PER MEETING

~~16.~~ 16. PLEASE GIVE A WAIVER FOR LANDSCAPE - I WILL REESTABLISH.

17. IM REPLACEING ONE HOUSE WITH ANOTHER, PLEASE WAIVER

18. THE OWTS IS DESIGNED FOR FOUR BEDROOMS. THE A.D.U. IS INCLUDED IN THIS SYSTEM.

19. I VE TRIED TO GET THIS ALL DONE.

20. PLEASE SEE LETTER FROM JOHN MARTIN DATED 12-31-2008

John Martin
Glenwood Springs, CO

Larry McCown
Rifle, CO

Trési Houpt
Glenwood Springs, CO

Garfield County

BOARD OF COUNTY COMMISSIONERS

December 30, 2008

To whom it may concern,

After reviewing and researching the records of Garfield County that concern 3642 and 3644 Hwy 82, in Glenwood Springs, Colorado, I have found there has been two separate dwellings on a single parcel of land located within Garfield County and have been recorded as such since mid 1960's. These dwellings were placed on the parcel before Garfield County enacted zoning codes in 1975. The dwellings share a private drive off of Hwy 82, share a well, but have separate ISDS and electrical power and have been issued a separate address. Each dwelling has been and continues to be lived in by two separate families. In 2000, Code enforcement officer for Garfield County, Steve Hackett, reviewed the question, "Could one of these Mobil homes be removed and replaced on this parcel? " His review showed it would be allowed.
My opinion: There are two homes on a single parcel and that parcel could be divided into two ownerships, allowing each home owner to own a portion of the parcel.

John Martin
Garfield County Commissioner

108 Eighth Street, Suite 213 • Glenwood Springs, CO 81601
(970) 945-5004 • Fax: (970) 945-7785

Garfield County

Community Development Department

August 2, 2018

Chris Janusz
3644 Highway 82
Glenwood Springs, CO 81601

RE: Completeness Review Janusz ADU – GAPA-05-18-8646

Dear Mr. Janusz

Thank you for your application for an Accessory Dwelling Unit located at 3644 Highway 82, Glenwood Springs CO 81601. Our completeness review included input from the County Attorney's Office and has identified several items that need to be addressed or clarified prior to a determination of technical completeness. Please respond to the following items:

Mineral Ownership Issues:

1. Please explain how the mineral research was completed and if the supplied records are the most up-to-date. The Quitclaim Mineral Deed shows half of the minerals are owned by Astrid Janusz Minerals LLC. An address is needed for that company if available. (THIS ITEM IS PENDING COUNTY ATTORNEY OFFICE REVIEW)

Water Plan:

2. Please provide the application for the new well permit with the Division of Water Resources.

3. Included in the application is an application for a Water Allotment Contract from the Basalt Water Conservancy District, but it is illegible. Please provide a legible version.

4. Please provide a draft copy of the updated well-sharing agreement indicating how the well will be shared between the two lots with the addition of the ADU. Please note that the updated well-sharing agreement will be required to be signed-off on by the adjoining property owner. Alternatively, you may submit a statement requesting that the updated well-sharing agreement be a Condition of Approval.

5. A 4-hour pump test that meets Section 4-203-M1b(5)(a) is required as part of the initial submittal. The applicant may request that the water quantity test be completed as a Condition of Approval, however this needs to be submitted as part of the application.

Access:

6. A traffic study is a required submittal item. Please indicate the estimated Average Daily Trips (ADT) on the road from Highway 82 to the proposed ADU.

7. Based on the traffic study, please provide a demonstration of whether or not the access road from Highway 82 to the proposed ADU meet the standards in Table 7-107 of the Land Use and Development Code. If the road does not meet those standards you may apply for a Waiver pursuant to the attached policy.

8. The access road appears to cross the property to the southeast. Please provide an access easement for that portion of the road.

Once the above topics are addressed, we can finalize our completeness review and schedule a date for the Director's Decision. Please note that the Garfield County Land Use and Development Code requires that the technical completeness issues be resolved within 60-days of the date of this letter. If not resolved in that timeframe, the application will be deemed withdrawn, unless a request for extension is submitted and approved.

Please feel free to call or request a follow-up meeting with staff to address any questions you may have regarding the above items. You may reach me at pwaller@garfield-county.com or 970-945-1377 ext. 1580.

Sincerely,

Patrick Waller
Senior Planner

8-6-18
PC 1 OF 2

TO - PATRIC WALKER
FROM CHRIS JANUSZ
RE 8-2-18 LETTER ADU-CAPA-05-18-8646

DEAR PATRIC,

RESPONSE TO ? # 1. PLEASE SEE ATTACHED 2 PAGE LETTER FROM THE LAW FIRM KARP NEU HANLON DATED 9-30-2014. PRIOR TO THIS DATE, A RAILROAD COMPANY FILED SUIT TO CLAIM MINERAL RIGHTS UNDER THEIR RAIL BEDS. MY PROPERTY USED TO BORDER THE RAIL BED PRIOR TO HWY 82 BEING BUILT, SO I GOT INVOLVED, AND THEN DETERMINED MY PROPERTY RETAINED OWNER SHIP OF THE MINERAL RIGHT BY THE PROPERTY OWNER.
I HAD THE KARP LAW FIRM RESEARCH MY LAND AND PUT THE 3644 ADDRESS IN MY NAME, AT THE SAME TIME, MY EX WIFE, ASTRID JANUSZ, 3189 "C" VIA BUENA VISTA, LAGUNA WOODS CA, 92637 AS THE SOLE OWNER OF 3642, HWY 82, GWS CO 81601. THE SECOND PAGE IS THE LATTER DOCUMENT I HAVE PROVING MY OWNERSHIP.

#2 - ATTACHED.
#3 - "
4 - PLEASE NOTE - ADJOINING PROPERTY IS CO OWNER OF WATER CONTRACT 715 AND HAS FULL KNOWLEDGE OF WHY I PURCHASED THIS CONTRACT FOR BOTH ADDRESS' AND LOTS 1+2.
5. ATTACHED
6. TRAFFIC STUDY - THE EXISTING DRIVWAY WAS BUILT OVER 40 YEARS AGO IN ORDER TO INSTALL HWY 82. THE DRIVWAY IS AT A TRAFFIC LIGHT FOR EASY ACCESS, THERE HAVE BEEN THREE HOMES ON THIS DRIVE AND WITH THE NEW A.D.U., THERE WILL BE A AVERAGE OF 40 VEHICLES A DAY. THE
7. DRIVEWAY TO THE A.D.U. MEETS AND EXCEEDS ALL STANDARDS OF SECTION AND TABLE 7-107. SEE SITE PLAN. DRIVE EXCEEDS SIMPRIMATIVE DRIVEWAY STANDARS.
8. SEE ATTACHED

MINUTES OF MEMBERS ACTIONS
IN THE ORGANIZATION OF
CHRIS JANUSZ MINERALS, LLC
A COLORADO LIMITED LIABILITY COMPANY

These Minutes are executed in lieu of an organizational meeting of Chris Janusz Minerals, LLC, a Colorado limited liability company (the "Company") effective October 31, 2014, at 201 14th Street, Suite 200, Glenwood Springs, Colorado 81601.

The undersigned, being the sole Member of the Company, took the following actions:

1. Articles of Organization and Certificate. The Articles of Organization attached to these Minutes as Exhibit "A", and certified by the Secretary of State, were approved pending correction of the entity name. The Articles of Amendment attached to these Minutes as Exhibit "B", and certified by the Secretary of State, were approved as setting forth the correct entity name.

2. Operating Agreement. The operations of the Company will be wholly governed by the provisions of the Colorado Limited Liability Company Act. As such, the Company shall not initially have an Operating Agreement.

3. Principal Place of Business. The principal place of business of the Company shall be 3644 Highway 82, Glenwood Springs, Colorado 81601.

4. Discharge of Organizer. The Organizer of the Company was and shall be forever discharged and indemnified by the Company from and against any expense or liability actually incurred by him by reason of having been the Organizer of the Company.

5. Membership. The sole Member of the Company shall be Chris Janusz who shall have one hundred percent (100%) Membership Interest in the Company.

6. Waiver of Notice. The undersigned, constituting the sole Member of the Company, does hereby waive any notice required for the holding of the organizational meeting.

7. Tax Status. The Company will adopt the default tax status for companies of this classification.

8. Approval of Real Property Contribution. The Company is authorized to accept a contribution of real property interests and to do all acts necessary to effect such acceptance.

9. Authority to Affect Title to Real Property. The undersigned is authorized to affect title to real property on behalf of the Company.

Document must be filed electronically.
Paper documents are not accepted.
Fees & forms are subject to change.
For more information or to print copies
of filed documents, visit www.sos.state.co.us.

E-Filed

Colorado Secretary of State
Date and Time: 09/04/2016 11:41 AM
ID Number: 20141584637

Document number: 20161604542
Amount Paid: $10.00

ABOVE SPACE FOR OFFICE USE ONLY

Periodic Report

filed pursuant to §7-90-301, et seq. and §7-90-501 of the Colorado Revised Statutes (C.R.S)

ID number: 20141584637

Entity name: Chris Janusz Minerals, LLC

Jurisdiction under the law of which the entity was formed or registered: Colorado

1. Principal office street address:
3644 Highway 82
(Street name and number)

Glenwood Springs | CO | 81601
(City) | *(State)* | *(Postal/Zip Code)*

(Province – if applicable) | United States *(Country – if not US)*

2. Principal office mailing address:
(if different from above)

(Street name and number or Post Office Box information)

(City) | *(State)* | *(Postal/Zip Code)*

(Province – if applicable) | *(Country – if not US)*

3. Registered agent name: (if an individual) Janusz | Christopher | M. | *(Last)* | *(First)* | *(Middle)* | *(Suffix)*

or (if a business organization)

4. The person identified above as registered agent has consented to being so appointed.

5. Registered agent street address:
3644 Highway 82
(Street name and number)

Glenwood Springs | CO | 81601
(City) | *(State)* | *(Postal/Zip Code)*

6. Registered agent mailing address:
(if different from above)

(Street name and number or Post Office Box information)

(City) | *(State)* | *(Postal/Zip Code)*

(Province – if applicable) | *(Country – if not US)*

Reception#: 855899
11/12/2014 03:21:13 PM Jean Alberico
1 of 8 Rec Fee:$46.00 Doc Fee:0.00 GARFIELD COUNTY CO

3

WELL SHARING COVENANT

THIS WELL SHARING COVENANT ("**Covenant**") is made and effective as of the 31st day of October, 2014.

RECITALS

This Covenant is made with reference to the following facts:

A. Christopher Janusz and Astrid Janusz (collectively, "Januszes") own two parcels of adjacent real property located in Garfield County, Colorado referred to, depicted and described as Lot 1 and Lot 2 on that certain Janusz Exemption Plat recorded in the Clerk and Recorder's Office of Garfield County, Colorado on July 20, 2009 as Reception No. 771770 ("Plat"). Lot 1 and Lot 2 are collectively referred to in this Agreement as the "Lots." The term "Lot" refers without specification to Lot 1 and/or Lot 2 individually.

B. Janusz is the holder of Well Permit No. 13563 (the "Well Permit") issued by the Colorado Department of Natural Resources, Office of the State Engineer. The Well Permit allows a total maximum pumping rate of 30 g.p.m. and limits the uses of the water produced by the well permitted under Well Permit (the "Well") to ordinary household purposes inside two single family dwellings, the irrigation of 1,000 square feet of lawn and garden, and watering of domestic animals.

C. The Well is constructed on and operates from Lot 1.

D. The water produced by the Well is used for the permitted purposes under the Well Permit on the Lots as of the effective date of this Covenant.

E. Janusz wishes to memorialize certain rights and restrictions appurtenant to the Lots concerning the use, maintenance, repair and/or improvement of the Well and related pipelines and equipment.

F. Janusz desires that the appurtenant rights and restrictions set forth in this Covenant be deemed a covenant running with the land.

COVENANT

1. Physical Infrastructure and Grant of Easement.

   a. The Well has been drilled and is operating on Lot 1 and buried delivery pipes have been installed from the Well to the dwellings on Lot 1 and Lot 2 constructed and in place as of the effective date of this Covenant.

b. Janusz hereby makes, establishes, grants and reserves for themselves and for theirs successors and assigns of the Lots a nonexclusive perpetual easement (the "Easement") upon, over, across and beneath the Lots at the location depicted on Exhibit A and described as "Well Easement," which Exhibit is attached hereto and incorporated herein by this reference, for the limited purposes of using, maintaining, repairing, or replacing or improving the Well, delivery pipes, pump, and associated physical improvements. The owner of Lot 2 also may use the Easement for the purposes of transporting persons and equipment to the Well to carry out the limited purposes of the Easement.

2. Authorized Use of the Well. The continued use of the Well on the Lots shall be limited to the uses allowed by the Well Permit. Upon the conveyance of title to a Lot, the owners of the Lots subsequent to such title conveyance shall cause the Well Permit to be amended with the Office of the State Engineer to reflect that the Well is owned by the owners of the Lots subsequent to such title conveyance.

3. Percentage Allotment of Total Well Production. For so long as the Lots are sharing the Well, each Lot shall be entitled to an equal one-half (1/2) share of the total water flow produced by the Well ("Well Yield"). Well Yield shall be measured in gallons per minute (g.p.m.). In any event, the total Well Yield shall not exceed 30 g.p.m., in compliance with the terms of the Well Permit. Any deficiency in production of the Well below 30 g.p.m. shall be allocated equally between the Lots.

4. Conservation. No Lot owner may waste water, and each owner shall exercise prudence and conservation in the use of water to allow for efficient and beneficial use of the Well and to avoid undue burden on the Well pump.

5. Cost of Repair, Maintenance and Improvements. From time to time the Well, delivery pipes, and associated facilities will require repair, maintenance and improvements. For so long as the Lots are sharing the Well, the cost of any such repair, maintenance and improvements shall be allocated as follows:

a. The cost of any repair, maintenance or improvement to the Well or the delivery pipes that benefits both Lot 1 and Lot 2 shall be allocated equally between the Lots; and

b. The cost of any repair, maintenance or improvement that benefits only one Lot shall be allocated to the benefitted Lot only; and

c. Any portion of the Easement that is disturbed while the Easement is being used for the purposes for which the Easement has been granted shall be promptly

Rev. 06/12

VERIFICATION

STATE OF Colorado)
) ss.
COUNTY OF Garfield)

I, Katherine Mac (name of Applicant or Applicant's duly authorized representative), being first duly sworn, upon oath, depose and state as follows:

1) I am the Applicant or a duly authorized officer, manager, agent or attorney-in-fact for the Applicant for this Application for Water Allotment Contract;
2) I have read and know the contents of this Application;
3) The information contained herein is an accurate and complete description of the Applicant's intended use of the Basalt Water Conservancy District's water rights;
4) The Applicant acknowledges that the accuracy and truth of all statements in this Application are conditions of approval of this Application by the Basalt Water Conservancy District and of the Contract to be made pursuant to such approval; and
5) I acknowledge that this application shall be subject to the District's Water Allotment Contract as approved and issued by the District.

Date: 4/6/18

By: _____

Print Name: Katherine Mac

Title: _____

Subscribed and sworn before me this 6 day of April, 2018 by Katherine Mac.

Witness my hand and seal.

_____
Notary Public

My commission expires: 6/6/21

Rev. 03/13

APPLICATION FOR WATER ALLOTMENT CONTRACT
BASALT WATER CONSERVANCY DISTRICT

1. Applicant(s) Contact Information

   a. Name: CHRIS JANUSZ "LOT2" + KATHERN MAC "LOT1"

   b. Mailing Address: 3644 HWY 82 GLENWOOD SPRINGS CO 81601

   c. Street Address: SAME

   d. Telephone Numbers: 970 948 2011

   e. Email Address: CMJANUSZ123@GMAIL.COM

   f. If Applicant is represented by an Attorney, please provide the Attorney's contact information, including name, address, telephone, and email:

   NA

   g. Emergency Local Contact Information, including name, address, telephone, and email:

   RICHARD BACHE 379-4198

   h. Contact Information of property manager, caretaker, irrigator, system operator, or agent who should be provided a copy of this contract, including name, address, telephone, and email:

   CHRIS JANUSZ SAME AS ABOVE

2. Type of land use (development) proposed for water allotment contract (i.e. single family home, subdivision, gravel pit, etc.):

   MINOR SUBDIVISION-LOT SPLIT

3. Legal description and address of property on which District's water rights and/or contract water will be used (attach map and vesting deed with proof of ownership)*:

   LOT 1+2 JANUSZ EXEMPTION

4. Elevation of property: X 6–7,000 ft., _____ 7–8,000 ft., _____ 8–9,000 ft.

5. Name and legal description of water supply diversion point(s):

Name of Diversion JANUSZ MAC WELL

Type of Diversion WELL (e.g., a well, spring, ditch, pipeline, etc.)

Legal Description: NE Quarter, NE Quarter, Section 27, Township 6 N / (S) Range 89 E / (W) of the 6th Principal Meridian, at a location 1149 feet from the N Section line and 100 feet from the E Section line.

UTM Coordinates (NAD 83):

Northing: 4375533228.

Easting: 309990 53.

_____ Zone 12 / X Zone 13.

If diversion point is a well, please provide the Well Permit No. 13563 A.

Is the well operational/active? X Yes, _____ No

Is there currently an operating well meter? X Yes, _____ No

Notice: A valid well permit with operating well meter will be required under the contract.

6. Legal Water Supply: (please check one)

X Applicant requests consideration by the District to be included in the District's Umbrella Plan for Augmentation decreed in Case No. 02CW77.*

*Note: Certain applicants may qualify to be included in the District's Umbrella Plan at the District's discretion. In order to be included in the District's Umbrella Plan, the Applicant's depletions must occur within the District's defined "Area A" and the Applicant must

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN ST., Ste 821, DENVER, CO 80203
Main: (303) 866-3581 Fax: (303) 866-2223 dwrpermitsonline@state.co.us

Office Use Only
RECEIVED
JUL 30 2018
Division 5 Water Resources
Glenwood Springs

Form GWS-44 (7/2012)

RESIDENTIAL Note: Also use this form to apply for livestock watering
Water Well Permit Application

Review form instructions prior to completing form.
Hand completed forms must be completed in black or blue ink or typed.

1. Applicant Information

Name(s): KATHERINE MAC
CHRIS JANUSZ

Mailing address: 3644 HWY 82

City: GLENWOOD SPRINGS | State: CO | Zip code: 81601

Telephone (w/area code): 970. 948. 2011 | E-mail:

2. Type Of Application (check applicable boxes)

- ☐ Construct new well
- ☐ Replace existing well
- ☑ Use existing well
- ☑ Change or increase use
- ☐ Change source (aquifer)
- ☐ Reapplication (expired permit)
- ☐ Rooftop precip. collection
- ☐ Other: _____

3. Refer To (if applicable)

Well permit #: 13563 A | Water Court case #: 13

Designated Basin Determination # | Well name or #

4. Location Of Proposed Well (Important! See Instructions)

County: GARFIELD | NE 1/4 of the NE 1/4

Section	Township	N or S	Range	E or W	Principal Meridian
27	6	☐ ☑	89	☐ ☑	6

Distance of well from section lines (section lines are typically not property lines)
Ft. from ☐ N ☐ S | Ft. from ☐ E ☐ W

For replacement wells only – distance and direction from old well to new well
N/A feet Direction

Well location address (include City, State, Zip) ☑ Check if well address is same as in Item 1.
3642 HWY 82 GWS CO 81601

Optional: GPS well location information in UTM format. GPS unit settings are as follows:

Format must be UTM
☐ Zone 12 or ☐ Zone 13
Units must be Meters
Datum must be NAD83
Unit must be set to true north
Was GPS unit checked for above? ☐ YES

Easting: 301979
Northing: 4375528
Remember to set Datum to NAD83

5. Parcel On Which Well Will Be Located
(You must attach a current deed for the subject parcel)

A. You must check and complete *one* of the following:

- ☐ Subdivision: Name JANUSZ EXEMPTION PLAT
  Lot LOTS 1+2 Block _____ Filing/Unit _____
- ☐ County exemption (attach copy of county approval & survey)
  Name/# _____ Lot # _____
- ☐ Parcel less than 35 acres, not in a subdivision attach a deed with metes & bounds description recorded prior to June 1, 1972, and current deed
- ☐ Mining claim (attach copy of deed or survey) Name/#: _____
- ☐ Square 40 acre parcel as described in Item 4
- ☐ Parcel of 35 or more acres (attach metes & bounds description or survey)
- ☐ Other: (attach metes & bounds description or survey)

B. # of acres in parcel 3/4

C. Are you the owner of this parcel? ☑ YES ☐ NO _____

D. Will this be the only well on this parcel? ☑ YES ☐ NO (if no – list other wells)

E. State Parcel ID# (optional):

6. Use Of Well (check applicable boxes)

See instructions to determine use(s) for which you may qualify

- ☐ A. Ordinary household use in one single-family dwelling (no outside use)
- ☑ B. Ordinary household use in 1 to 3 single-family dwellings:
  Number of dwellings: 2 +2 APTS
  - ☑ Home garden/lawn irrigation, not to exceed one acre:
    area irrigated 2000 ☑ sq. ft. ☐ acre
  - ☐ Domestic animal watering – (non-commercial)
- ☐ C. Livestock watering (on farm/ranch/range/pasture)

7. Well Data (proposed)

Maximum pumping rate		Annual amount to be withdrawn	
15	gpm	1.69	acre-feet
Total depth		**Aquifer**	
139	feet	TRIB	

8. Water Supplier

Is this parcel within boundaries of a water service area? ☐ YES ☑ NO
If yes, provide name of supplier:

9. Type Of Sewage System

- ☑ Septic tank / absorption leach field
- ☐ Central system: District name: _____
- ☐ Vault: Location sewage to be hauled to: _____
- ☐ Other (explain) _____

10. Proposed Well Driller License #(optional): EXST

11. Sign or Enter Name of Applicant(s) or Authorized Agent

The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104 (13)(a). I have read the statements herein, know the contents thereof and state that they are true to my knowledge.

Sign or enter name(s) of person(s) submitting application: Chris Janusz & Kat
Date (mm/dd/yyyy): 7-2-18

If signing print name and title: KATHERINE MAC CHRIS JANUSZ OWNERS

Office Use Only

USGS map name | DWR map no. | Surface elev.

Receipt area only

AQUAMAP
WE
WR
CWCB
TOPO
MYLAR
SB5

DIV 5 WD 38 BA ____ MD ____

SAMUELSON PUMP CO., INC.
GLENWOOD SPRINGS, CO
945-6309

April 13, 2018

Chris Janusz
3644 Hwy 82
Glenwood Springs, Co. 81601

ATTN: Chris

On 4/10/18, a well test was conducted on a well on serving the Janusz Property. The following information was obtained;

Well Depth---------- 130'
Casing Size---------- (7 x 5)"
Standing water level---------- 98.87'
Total test time---------- 4 Hours
Drawdown to ---------- 101.58'
Production is greater than---------- 15.3 GPM

This test was conducted with Existing 3/4 Hp pump. The well water level recovered back to 98.7 in 5 Minutes. This is a very good well and could supply water to 2 or more homes. If you have any questions please call me, Raun Samuelson at 970-945-6309.

Sincerely;

Raun E Samuelson
Samuelson Pump Co.

MY NAME IS TOM WILLISON

I OWN THE PROPERTY DESCRIBED AS VCTI, LLC IN THE SE 1/4 OF THE NW 1/4, SECTION 26 TOWNSHIP 6.0S RANGE 89, 6TH PM, GARFIELD CO, COLORADO

THE COLORADO STATE HWY DEPARTMENT PUT THE ACCESS TO MY NEIBORS PROPERTY TO THE NORTH OVER 40 YRS AGO AND I'M IN TOTAL AGREEMENT THAT IT IS OK WITH ME.

Tom Willison

DATE - 8-14-18

Tom Willison

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

May 17, 2018

Report to:
Ben Elmore
Zancanella & Associates
1011 Grand Ave
Glenwood Springs, CO 81601

Bill to:
Accounts Payable
Zancanella & Associates
1011 Grand Ave.
Glenwood Springs, CO 81601

Project ID: BO39632
ACZ Project ID: L43774

Ben Elmore:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on April 18, 2018. This project has been assigned to ACZ's project number, L43774. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L43774. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after June 16, 2018. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Max Janicek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Zancanella Associates

May 17, 2018

Project ID: BO39632
ACZ Project ID: L43774

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 1 drinking water sample from Zancanella & Associates on April 18, 2018. The sample was received in good condition. Upon receipt, the sample custodian removed the sample from the cooler, inspected the contents, and logged the sample into ACZ's computerized Laboratory Information Management System (LIMS). The sample was assigned ACZ LIMS project number L43774. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

This sample was analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The Coliforms results for L43774-01 have been qualified with the N1 flag on the extended qualifier report. The chemist noted that the reported count is 0 based on the associated 25mL and 50mL count. The 1mL count displayed potential carryover from preceding sample. Because colony count was 0 for the 25mL and 50mL dilutions, it is believed that there are no coliforms present in the client sample.

Zancanella & Associates
Project ID: BO39632
Sample ID: (AS PROVIDED)GREENRAWREDPCREDPCWMREDR

ACZ Sample ID: ***L43774-01***
Date Sampled: *04/17/18 10:00*
Date Received: *04/18/18*
Sample Matrix: *Drinking Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Recoverable Digestion	M200.2 ICP-MS								04/26/18 14:32	mfm
Total Recoverable Digestion	M200.2 ICP								04/24/18 13:21	aeh

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total recoverable	M200.8 ICP-MS	1	0.001	B		mg/L	0.0005	0.002	05/03/18 14:06	mfm
Cadmium, total recoverable	M200.7 ICP	1		U	*	mg/L	0.005	0.02	04/25/18 16:49	dcm
Calcium, dissolved	M200.7 ICP	1	87.0		*	mg/L	0.1	0.5	04/20/18 15:55	aeh
Copper, total recoverable	M200.7 ICP	1		U	*	mg/L	0.01	0.05	04/25/18 16:49	dcm
Iron, total recoverable	M200.7 ICP	1	0.24			mg/L	0.02	0.05	04/25/18 16:49	dcm
Lead, total recoverable	M200.8 ICP-MS	1	0.0002	B		mg/L	0.0001	0.0005	05/03/18 14:06	mfm
Magnesium, dissolved	M200.7 ICP	1	25.6			mg/L	0.2	1	04/20/18 15:55	aeh
Manganese, total recoverable	M200.7 ICP	1		U		mg/L	0.005	0.03	04/25/18 16:49	dcm
Sodium, dissolved	M200.7 ICP	1	22.9			mg/L	0.2	1	04/20/18 15:55	aeh
Uranium, total recoverable	M200.8 ICP-MS	1	0.0034			mg/L	0.0001	0.0005	05/03/18 14:06	mfm
Zinc, total recoverable	M200.7 ICP	1		U		mg/L	0.01	0.05	04/25/18 16:49	dcm

Zancanella & Associates
Project ID: BO39632
Sample ID: (AS PROVIDED)GREENRAWREDPCREDPCWMREDR

ACZ Sample ID: ***L43774-01***
Date Sampled: *04/17/18 10:00*
Date Received. *04/18/18*
Sample Matrix: *Drinking Water*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	232		*	mg/L	2	20	04/21/18 0:00	enb
Carbonate as CaCO3		1		U	*	mg/L	2	20	04/21/18 0:00	enb
Hydroxide as CaCO3		1		U	*	mg/L	2	20	04/21/18 0:00	enb
Total Alkalinity		1	232		*	mg/L	2	20	04/21/18 0:00	enb
Chloride	SM4500Cl-E	1	28.9		*	mg/L	0.5	2	04/25/18 12:43	las
Coliforms, fecal	SM9222D - Membrane Filter	1	0	H	*	#/100ml	1	1	04/18/18 16:39	enb
Conductivity @25C	SM2510B	1	725		*	umhos/cm	1	10	04/21/18 3:09	enb
Corrosivity (calc.)	SM 2330 - CaCO3 SI		1.0		*	SI Unit			05/17/18 0:00	calc
Fluoride	SM4500F-C	1	0.33		*	mg/L	0.05	0.3	04/25/18 9:31	emk
Hardness as CaCO3 (dissolved)	SM2340B - Calculation		323			mg/L	0.2	5	05/17/18 0:00	calc
Lab Filtration (0.45um filter)	SOPWC050	1							04/24/18 12:27	emk
Lab Filtration (0.45um) & Acidification	M200.7/200.8	1							04/19/18 11:30	aeh
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		1.00			mg/L	0.02	0.1	05/17/18 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.00		*	mg/L	0.02	0.1	04/18/18 21:44	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		U	*	mg/L	0.01	0.05	04/18/18 21:44	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	04/21/18 0:00	enb
pH measured at		1	21.9		*	C	0.1	0.1	04/21/18 0:00	enb
Residue, Filterable (TDS) @180C	SM2540C	1	454		*	mg/L	10	20	04/23/18 14:04	mh
Sodium Adsorption Ratio in Water	USGS - I1738-78		0.56						05/17/18 0:00	calc
Sulfate	SM4500 SO4-D	1	120		*	mg/L	10	50	04/24/18 12:45	emk

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (QUAL)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Report References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Zancanella & Associates

ACZ Project ID: ***L43774***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445815													
WG445815PBW1	PBW	04/20/18 17:00				4.6	mg/L		-20	20			
WG445815LCSW3	LCSW	04/20/18 17:16	WC180410-7	820.0001		784	mg/L	96	90	110			
WG445815LCSW6	LCSW	04/20/18 20:27	WC180410-7	820.0001		779	mg/L	95	90	110			
WG445815PBW2	PBW	04/20/18 20:36				5.1	mg/L		-20	20			
WG445815LCSW9	LCSW	04/21/18 0:16	WC180410-7	820.0001		794	mg/L	97	90	110			
WG445815PBW3	PBW	04/21/18 0:25				5.1	mg/L		-20	20			
WG445815LCSW12	LCSW	04/21/18 2:50	WC180410-7	820.0001		785	mg/L	96	90	110			
WG445815PBW4	PBW	04/21/18 2:59				5.3	mg/L		-20	20			
L43774-01DUP	DUP	04/21/18 3:18			232	220	mg/L				5	20	
WG445815LCSW15	LCSW	04/21/18 5:14	WC180410-7	820.0001		800	mg/L	98	90	110			

Arsenic, total recoverable M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446597													
WG446597ICV	ICV	05/03/18 13:51	MS180423-2	.05		.05029	mg/L	101	90	110			
WG446597ICB	ICB	05/03/18 13:53				U	mg/L		-0.0015	0.0015			
WG446130LRB	LRB	05/03/18 13:58				U	mg/L		-0.0011	0.0011			
WG446130LFB	LFB	05/03/18 14:00	MS180330-2	.0501		.04619	mg/L	92	85	115			
L43774-01LFM	LFM	05/03/18 14:08	MS180330-2	.0501	.001	.04459	mg/L	87	70	130			
L43774-01LFMD	LFMD	05/03/18 14:11	MS180330-2	.0501	.001	.04524	mg/L	88	70	130	1	20	

Cadmium, total recoverable M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446057													
WG446057ICV	ICV	04/25/18 15:51	II180424-2	2		1.9448	mg/L	97	95	105			
WG446057ICB	ICB	04/25/18 15:57				U	mg/L		-0.015	0.015			
WG445957LRB	LRB	04/25/18 16:13				U	mg/L		-0.011	0.011			
WG445957LFB	LFB	04/25/18 16:16	II180413-3	.4995		.4908	mg/L	98	85	115			
L43752-01LFM	LFM	04/25/18 16:29	II180413-3	.4995	U	.4949	mg/L	99	70	130			
L43752-01LFMD	LFMD	04/25/18 16:33	II180413-3	.4995	U	.4928	mg/L	99	70	130	0	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445808													
WG445808ICV	ICV	04/20/18 15:34	II180327-1	100		98.05	mg/L	98	95	105			
WG445808ICB	ICB	04/20/18 15:40				U	mg/L		-0.3	0.3			
WG445808LFB	LFB	04/20/18 15:53	II180413-3	67.9908		67.01	mg/L	99	85	115			
L43806-01AS	AS	04/20/18 16:08	II180413-3	67.9908	206	260.2	mg/L	80	85	115			M3
L43806-01ASD	ASD	04/20/18 16:11	II180413-3	67.9908	206	262.6	mg/L	83	85	115	1	20	M3

Chloride SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446071													
WG446071ICB	ICB	04/25/18 7:51				U	mg/L		-1.5	1.5			
WG446071ICV	ICV	04/25/18 7:52	WI170807-5	55.165		58.66	mg/L	106	90	110			
WG446071LFB1	LFB	04/25/18 12:42	WI171229-5	30.03		32.54	mg/L	108	90	110			
L43752-01AS	AS	04/25/18 12:43	WI171229-5	30.03	1.3	33.33	mg/L	107	90	110			
L43757-01DUP	DUP	04/25/18 14:14			418	421.9	mg/L				1	20	

Zancanella & Associates ACZ Project ID: ***L43774***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445815													
WG445815LCSW2	LCSW	04/20/18 17:04	PCN55420	1409		1470	umhos/cm	104	90	110			
WG445815LCSW5	LCSW	04/20/18 20:16	PCN55420	1409		1460	umhos/cm	104	90	110			
WG445815LCSW8	LCSW	04/21/18 0:04	PCN55420	1409		1450	umhos/cm	103	90	110			
WG445815LCSW11	LCSW	04/21/18 2:39	PCN55420	1409		1430	umhos/cm	101	90	110			
L43774-01DUP	DUP	04/21/18 3:18			725	724	umhos/cm				0	20	
WG445815LCSW14	LCSW	04/21/18 5:02	PCN55420	1409		1430	umhos/cm	101	90	110			

Copper, total recoverable M200.7 ICP

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446057													
WG446057ICV	ICV	04/25/18 15:51	II180424-2	2		1.987	mg/L	99	95	105			
WG446057ICB	ICB	04/25/18 15:57				U	mg/L		-0.03	0.03			
WG445957LRB	LRB	04/25/18 16:13				U	mg/L		-0.022	0.022			
WG445957LFB	LFB	04/25/18 16:16	II180413-3	.4975		.495	mg/L	99	85	115			
L43752-01LFM	LFM	04/25/18 16:29	II180413-3	.4975	.06	.564	mg/L	101	70	130			
L43752-01LFMD	LFMD	04/25/18 16:33	II180413-3	.4975	.06	.562	mg/L	101	70	130	0	20	

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446003													
WG446003ICV	ICV	04/25/18 9:08	WC180423-1	1.996		1.992	mg/L	100	95	105			
WG446003ICB	ICB	04/25/18 9:14				.056	mg/L		-0.15	0.15			
WG446003LFB1	LFB	04/25/18 9:27	WC171227-7	4.99		4.934	mg/L	99	90	110			
L43774-01AS	AS	04/25/18 9:35	WC171227-7	4.99	.33	4.724	mg/L	88	90	110			M2
L43774-01DUP	DUP	04/25/18 9:43			.33	.408	mg/L				21	20	RA
WG446003LFB2	LFB	04/25/18 12:30	WC171227-7	4.99		4.913	mg/L	98	90	110			

Iron, total recoverable M200.7 ICP

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446057													
WG446057ICV	ICV	04/25/18 15:51	II180424-2	2		1.928	mg/L	96	95	105			
WG446057ICB	ICB	04/25/18 15:57				U	mg/L		-0.06	0.06			
WG445957LRB	LRB	04/25/18 16:13				U	mg/L		-0.044	0.044			
WG445957LFB	LFB	04/25/18 16:16	II180413-3	1.0011		.991	mg/L	99	85	115			
L43752-01LFM	LFM	04/25/18 16:29	II180413-3	1.0011	U	1.009	mg/L	101	70	130			
L43752-01LFMD	LFMD	04/25/18 16:33	II180413-3	1.0011	U	.998	mg/L	100	70	130	1	20	

Lead, total recoverable M200.8 ICP-MS

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446597													
WG446597ICV	ICV	05/03/18 13:51	MS180423-2	.05		.05305	mg/L	106	90	110			
WG446597ICB	ICB	05/03/18 13:53				U	mg/L		-0.0003	0.0003			
WG446130LRB	LRB	05/03/18 13:58				U	mg/L		-0.00022	0.00022			
WG446130LFB	LFB	05/03/18 14:00	MS180330-2	.0496		.04533	mg/L	91	85	115			
L43774-01LFM	LFM	05/03/18 14:08	MS180330-2	.0496	.0002	.04603	mg/L	92	70	130			
L43774-01LFMD	LFMD	05/03/18 14:11	MS180330-2	.0496	.0002	.0458	mg/L	92	70	130	1	20	

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ACZ Project ID: ***L43774***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445808													
WG445808ICV	ICV	04/20/18 15:34	II180327-1	100		97.93	mg/L	98	95	105			
WG445808ICB	ICB	04/20/18 15:40				U	mg/L		-0.6	0.6			
WG445808LFB	LFB	04/20/18 15:53	II180413-3	49.96377		45.68	mg/L	91	85	115			
L43806-01AS	AS	04/20/18 16:08	II180413-3	49.96377	58.9	101.9	mg/L	86	85	115			
L43806-01ASD	ASD	04/20/18 16:11	II180413-3	49.96377	58.9	102.1	mg/L	86	85	115	0	20	

Manganese, total recoverable M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446057													
WG446057ICV	ICV	04/25/18 15:51	II180424-2	2		1.9685	mg/L	98	95	105			
WG446057ICB	ICB	04/25/18 15:57				U	mg/L		-0.015	0.015			
WG445957LRB	LRB	04/25/18 16:13				U	mg/L		-0.011	0.011			
WG445957LFB	LFB	04/25/18 16:16	II180413-3	.5		.5081	mg/L	102	85	115			
L43752-01LFM	LFM	04/25/18 16:29	II180413-3	.5	U	.5155	mg/L	103	70	130			
L43752-01LFMD	LFMD	04/25/18 16:33	II180413-3	.5	U	.5133	mg/L	103	70	130	0	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445678													
WG445678ICV	ICV	04/18/18 21:20	WI180301-7	2.416		2.483	mg/L	103	90	110			
WG445678ICB	ICB	04/18/18 21:21				U	mg/L		-0.02	0.02			
WG445678LFB1	LFB	04/18/18 21:26	WI180103-12	2		2.116	mg/L	106	90	110			
L43772-02DUP	DUP	04/18/18 21:34			.08	.084	mg/L				5	20	RA
WG445678LFB2	LFB	04/18/18 22:06	WI180103-12	2		2.085	mg/L	104	90	110			
L43772-01AS	AS	04/18/18 22:31	WI180103-12	2	.04	2.111	mg/L	104	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445678													
WG445678ICV	ICV	04/18/18 21:20	WI180301-7	.609		.623	mg/L	102	90	110			
WG445678ICB	ICB	04/18/18 21:21				U	mg/L		-0.01	0.01			
WG445678LFB1	LFB	04/18/18 21:26	WI180103-12	1		1.048	mg/L	105	90	110			
L43772-01AS	AS	04/18/18 21:31	WI180103-12	1	U	1.041	mg/L	104	90	110			
L43772-02DUP	DUP	04/18/18 21:34			U	U	mg/L				0	20	RA
WG445678LFB2	LFB	04/18/18 22:06	WI180103-12	1		1.042	mg/L	104	90	110			

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445815													
WG445815LCSW1	LCSW	04/20/18 17:03	PCN54162	6.01		6.1	units	101	5.9	6.1			
WG445815LCSW4	LCSW	04/20/18 20:14	PCN54162	6.01		6.1	units	101	5.9	6.1			
WG445815LCSW7	LCSW	04/21/18 0:02	PCN54162	6.01		6.1	units	101	5.9	6.1			
WG445815LCSW10	LCSW	04/21/18 2:37	PCN54162	6.01		6.1	units	101	5.9	6.1			
L43774-01DUP	DUP	04/21/18 3:18			8.2	8.2	units				0	20	
WG445815LCSW13	LCSW	04/21/18 5:00	PCN54162	6.01		6.1	units	101	5.9	6.1			

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ACZ Project ID: ***L43774***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445913													
WG445913PBW	PBW	04/23/18 13:36				U	mg/L		-20	20			
WG445913LCSW	LCSW	04/23/18 13:38	PCN54739	260		268	mg/L	103	80	120			
L43782-01DUP	DUP	04/23/18 14:10			3920	3940	mg/L				1	10	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445808													
WG445808ICV	ICV	04/20/18 15:34	II180327-1	100		99.15	mg/L	99	95	105			
WG445808ICB	ICB	04/20/18 15:40				U	mg/L		-0.6	0.6			
WG445808LFB	LFB	04/20/18 15:53	II180413-3	100.1384		97.95	mg/L	98	85	115			
L43806-01AS	AS	04/20/18 16:08	II180413-3	100.1384	155	247.7	mg/L	93	85	115			
L43806-01ASD	ASD	04/20/18 16:11	II180413-3	100.1384	155	247.1	mg/L	92	85	115	0	20	

Sulfate SM4500 SO4-D

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG445992													
WG445992PBW	PBW	04/24/18 12:30				U	mg/L		-30	30			
WG445992LCSW	LCSW	04/24/18 12:33	WC170902-4	100		103	mg/L	103	80	120			
L43866-06DUP	DUP	04/24/18 13:15			300	306	mg/L				2	20	

Uranium, total recoverable M200.8 ICP-MS

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446597													
WG446597ICV	ICV	05/03/18 13:51	MS180423-2	.05		.05431	mg/L	109	90	110			
WG446597ICB	ICB	05/03/18 13:53				U	mg/L		-0.0003	0.0003			
WG446130LRB	LRB	05/03/18 13:58				U	mg/L		-0.00022	0.00022			
WG446130LFB	LFB	05/03/18 14:00	MS180330-2	.05		.04746	mg/L	95	85	115			
L43774-01LFM	LFM	05/03/18 14:08	MS180330-2	.05	.0034	.05398	mg/L	101	70	130			
L43774-01LFMD	LFMD	05/03/18 14:11	MS180330-2	.05	.0034	.05389	mg/L	101	70	130	0	20	

Zinc, total recoverable M200.7 ICP

ACZ ID	Type	Analyzed	Prep/Run	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG446057													
WG446057ICV	ICV	04/25/18 15:51	II180424-2	2		1.956	mg/L	98	95	105			
WG446057ICB	ICB	04/25/18 15:57				U	mg/L		-0.03	0.03			
WG445957LRB	LRB	04/25/18 16:13				U	mg/L		-0.022	0.022			
WG445957LFB	LFB	04/25/18 16:16	II180413-3	.4942		.503	mg/L	102	85	115			
L43752-01LFM	LFM	04/25/18 16:29	II180413-3	.4942	.02	.515	mg/L	100	70	130			
L43752-01LFMD	LFMD	04/25/18 16:33	II180413-3	.4942	.02	.52	mg/L	101	70	130	1	20	

Zancanella & Associates

ACZ Project ID: ***L43774***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L43774-01	WG445815	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG445808	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG445815	Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG446071	Chloride	SM4500Cl-E	Q6	Sample was received above recommended temperature.
	WG445665	Coliforms, fecal	SM9222D - Membrane Filter	H3	Sample was received and analyzed past holding time.
			SM9222D - Membrane Filter	N1	See Case Narrative.
			SM9222D - Membrane Filter	Q6	Sample was received above recommended temperature.
	WG445815	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	RG635393	Corrosivity (calc.)	SM 2330 - CaCO3 SI	ZZ	Laboratory measured pH and temperature were used in this calculation. Sampler did not report either field pH, field temperature, or both.
	WG446003	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	Q6	Sample was received above recommended temperature.
			SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG445815	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG445678	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
	WG445815	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG445913	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG445992	Sulfate	SM4500 SO4-D	Q6	Sample was received above recommended temperature.
	WG445815	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Zancanella & Associates
Project ID: BO39632
Sample ID: (AS PROVIDED)GREENRAWREDPCREDPCWMRE
Locator:

ACZ Sample ID: ***L43774-01***
Date Sampled: *04/17/18 10:00*
Date Received: *04/18/18*
Sample Matrix: *Drinking Water*

Gross Alpha & Beta
M900.0

Prep Method:

Alpha	04/26/18 0:31	5.4	2.5	1.7	pCi/L	*	gjb
Beta	04/26/18 0:31	5.4	3.1	3	pCi/L	*	gjb

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Zancanella & Associates

ACZ Project ID: ***L43774***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alpha M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	MB	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG446144																
WG446152PBW	PBW	04/26/18						.51	0.91	1			2			
WG446152LCSW	LCSW	04/26/18	PCN55778	100				100	8.7	1.8	100	67	144			
L43749-02DUP	DUP-RPD	04/26/18			11	4.3	7.8	4.9	3.2	9.5				77	20	RG
L43749-02DUP	DUP-RER	04/26/18			11	4.3	7.8	4.9	3.2	9.5				1.14	2	
L43749-06DUP	DUP-RPD	04/26/18			3.1	2.9	6.3	1.4	2.8	6.6				76	20	RG
L43749-06DUP	DUP-RER	04/26/18			3.1	2.9	6.3	1.4	2.8	6.6				0.42	2	
L43749-03MS	MS	04/26/18	PCN55778	100	9	4.1	7.5	100	12	6.9	91	67	144			

Beta M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	MB	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG446144																
WG446152PBW	PBW	04/26/18						.14	1.8	1.9			3.8			
WG446152LCSW	LCSW	04/26/18	RC180320-10	100				94	6.4	2.8	94	82	122			
L43749-02DUP	DUP-RPD	04/26/18			12	4.4	8.2	8	4.6	7.7				40	20	RG
L43749-02DUP	DUP-RER	04/26/18			12	4.4	8.2	8	4.6	7.7				0.63	2	
L43749-06DUP	DUP-RPD	04/26/18			1.9	3.9	13	2.7	3.6	13				35	20	RG
L43749-06DUP	DUP-RER	04/26/18			1.9	3.9	13	2.7	3.6	13				0.15	2	
L43749-08MS	MS	04/26/18	RC180320-10	100	5.6	4	14	150	9.7	13	144	82	122			M1

Zancanella & Associates

ACZ Project ID: ***L43774***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L43774-01	WG446144	Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Beta	M900.0	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.

Metals Analysis

The following parameters are not covered for certification or are not covered by NELAC certificate #ACZ

Cadmium, total recoverable	M200.7 ICP
Copper, total recoverable	M200.7 ICP

Wet Chemistry

The following parameters are not covered for certification or are not covered by NELAC certificate #ACZ

Chloride	SM4500Cl-E
Coliforms, fecal	SM9222D - Membrane Filter
Sulfate	SM4500 SO4-D

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Zancanella & Associates
BO39632

ACZ Project ID: L43774
Date Received: 04/18/2018 11:25
Received By:
Date Printed: 4/18/2018

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?	X		

A change was made in the Report to Name section prior to ACZ custody.

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
5064	7.9	<=6.0	16	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Zancanella & Associates
BO39632

ACZ Project ID: L43774
Date Received: 04/18/2018 11:25
Received By:
Date Printed: 4/18/2018

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L43774

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

~~L43744~~ JJC 4-18-18

CHAIN of CUSTODY

Report to:

Name: Ben Elmore
Company: Zancanella & Assoc
E-mail: belmore@za-engineering
Address: 1011 Grand Ave
Glenwood Springs CO 81601
Telephone: 970-945-5700

Copy of Report to:

Name:
Company:
E-mail:
Telephone:

Invoice to:

Name: Zancanella & Assoc
Company:
E-mail:
Address: 1011 Grand Ave
Glenwood Springs, CO 81601
Telephone: 970-945-5700

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES X NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes No
If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: Evan Sampler's Site Information State CO Zip code 81601 Time Zone MNT
*Sampler's Signature:
*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: DW-CUSTOM-2018
PO#: 5039637
Reporting state for compliance testing: NE
Check box if samples include NRC licensed material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers
(As Provided)	4/17/18 10:00am		
Green			
Raw			
Red PC			
Red PC WM			
Red Rad			
Sterile			
White			

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	4/17/18 1:00 pm	JJC	4-18-18 11:25

L43774 Chain of Custody

RMAD050 06.14.14
L43774-1805171031

White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: ZANCANELLA/Zancanella Associate
Bottle Order: BO39632

Bill to Account: Bill to ACZ
Ship Date Requested: 04/12/2018
Request Placed at: 04/11/2018 15:27
Service Requested: UPS Ground

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	1	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	2	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	1	RETURN	Return Address	Return Address label, one for each cooler.
	14	LABELS	Sample Labels	ACZ supplied labels for sample containers

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	5064	Medium	9	1Z8101300317188410

Quote number: DW-CUSTOM-2018
Sample Quantity: 2

Drinking Water - Custom list 2018

ACZ is responsible for necessary sample filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN	125 ML	Filtered/Nitric	Metals (dissolved except ICPMS) - This is a filtered sample. Completely fill container.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	RED PC	250 ML	Red pre-cleaned Raw/Nitric	Metals (total including ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	RED PC WM	1 L	Red pre-cleaned wide mouth Raw/Nitric	Metals (total ICPMS) - Do not overfill as there is Nitric Acid in the bottle.
	1	RED RAD	1000 ML	Raw/Nitric	Radiochemistry (total) - Do not overfill as there is Nitric Acid in the bottle.
	1	STERILE	100 ML	Raw/Sodium Thiosulfate	Coliforms - Completely fill container with sample. Coliforms require testing within 24 hours of sampling time. Please call ACZ if prior arrangements have not been made so we are prepared for the arrival of this sample.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - This is a filtered sample. Completely fill container.

Prepared By/Date: _____

mjj

Water Quality Results
Chris Janusz

Analyte	Category	Units	Detection Level[1]	Result	Threshold	Regulation[2]	Status
Arsenic	Metals Analysis	mg/L	0.0005	0.001	0.01	Primary	Pass
Cadmium	Metals Analysis	mg/L	0.005	U	0.01	Primary	Pass
Calcium, dissolved	Metals Analysis	mg/L	0.1	87	N/A	N/A	N/A
Copper	Metals Analysis	mg/L	0.02	U	1.3	Primary	Pass
Iron *	Metals Analysis	mg/L	0.02	0.24	0.30	Secondary	Pass
Lead	Metals Analysis	mg/L	0.0001	0.0002	0.015	Primary	Pass
Magnesium	Metals Analysis	mg/L	0.2	25.6	N/A	N/A	N/A
Manganese	Metals Analysis	mg/L	0.005	U	0.050	Secondary	Pass
Sodium	Metals Analysis	mg/L	0.2	22.9	N/A	None	Pass
Zinc	Metals Analysis	mg/L	0.01	U	5.0	Secondary	Pass
Chloride	Wet Chemistry	mg/L	2.5	28.9	250	Secondary	Pass
Coliforms, fecal	Wet Chemistry	#/100 ml	1	0	1	Primary	H
Fluoride	Wet Chemistry	mg/L	0.25	0.33	4.0	Primary	Pass
Sulfate	Wet Chemistry	mg/L	2.5	120	250	Secondary	Pass
Nitrate	Wet Chemistry	mg/L as N	0.02	1.00	10.0	Primary	Pass
Nitrite	Wet Chemistry	mg/L as N	0.01	U	1.0	Primary	Pass
Total Nitrate and Nitrite	Wet Chemistry	mg/L as N	0.02	1.00	10.0	Primary	Pass
Alkalinity, Bicarbonate	Wet Chemistry	mg/L as $CaCO_3$	2	232	N/A	N/A	N/A
Alkalinity, Total	Wet Chemistry	mg/L as $CaCO_3$	2	232	N/A	N/A	N/A
Carbonate	Wet Chemistry	mg/L as $CaCO_3$	2	U	N/A	N/A	N/A
Hydroxide	Wet Chemistry	mg/L as $CaCO_3$	2	U	N/A	N/A	N/A
Corrosivity (calc.)	Wet Chemistry	SI unit	N/A	1.0	N/A	N/A	N/A
Conductivity, @ 25°C	Wet Chemistry	µS/cm	1	725	N/A	N/A	N/A
Hardness[3]	Wet Chemistry	mg/L as $CaCO_3$	1	323	N/A	N/A	N/A
pH	Wet Chemistry	Standard Units	0.1	8.2	6.5 < pH < 8.5	Secondary	Pass
Sodium Absorption Ratio	Wet Chemistry	N/A	N/A	0.56	N/A	N/A	N/A
Total Dissolved Solids	Wet Chemistry	mg/L	10	454	500	Secondary	Pass
Gross Alpha Activity	Radiochemistry	pica/L	2	5.4	15.0	Primary	Pass
Gross Beta Activity	Radiochemistry	pCi/L	2.2	5.4	50.0	Primary	Pass
Uranium	Metals Analysis	mg/L	0.0001	0.0034	0.030	Primary	Pass

[1] The *Detection Level* is the minimum concentration at which the analyte must be present to be detected by the laboratory testing method.
Result of "u" = analyte not detected at level equal or above the detection level shown.

[2] *Primary* = The threshold indicated is a *Primary* standard and is enforceable on community water systems; *Secondary* = The threshold indicated is a non-enforceable standard on community water systems and is the suggested contaminant level to reduce health risks and/or improve aesthetic qualities of water such as taste, odor, and color. Private wells serving less than 15 connections or 25 people are NOT considered to be community water systems and therefore not under the jurisdiction of agencies regulating drinking water such as the EPA and CDPHE. The community water system standards are presented fo sake of reference for risk evaluation to human health and other aesthetic qualities shown.

[3] Hardness Scale:

Soft	<75
Moderately Hard	75-120
Hard	120-200
Very Hard	>200

Water Quality Results
Chris Janusz

Analyte	Category	Units	Detection Level[1]	Result	Threshold	Regulation[2]	Status
Arsenic	Metals Analysis	mg/L	0.0005	0.001	0.01	Primary	Pass
Cadmium	Metals Analysis	mg/L	0.005	U	0.01	Primary	Pass
Calcium, dissolved	Metals Analysis	mg/L	0.1	87	N/A	N/A	N/A
Copper	Metals Analysis	mg/L	0.02	U	1.3	Primary	Pass
Iron *	Metals Analysis	mg/L	0.02	0.24	0.30	Secondary	Pass
Lead	Metals Analysis	mg/L	0.0001	0.0002	0.015	Primary	Pass
Magnesium	Metals Analysis	mg/L	0.2	25.6	N/A	N/A	N/A
Manganese	Metals Analysis	mg/L	0.005	U	0.050	Secondary	Pass
Sodium	Metals Analysis	mg/L	0.2	22.9	N/A	None	Pass
Zinc	Metals Analysis	mg/L	0.01	U	5.0	Secondary	Pass
Chloride	Wet Chemistry	mg/L	2.5	28.9	250	Secondary	Pass
Coliforms, fecal	Wet Chemistry	#/100 ml	1	0	1	Primary	H
Fluoride	Wet Chemistry	mg/L	0.25	0.33	4.0	Primary	Pass
Sulfate	Wet Chemistry	mg/L	2.5	120	250	Secondary	Pass
Nitrate	Wet Chemistry	mg/L as N	0.02	1.00	10.0	Primary	Pass
Nitrite	Wet Chemistry	mg/L as N	0.01	U	1.0	Primary	Pass
Total Nitrate and Nitrite	Wet Chemistry	mg/L as N	0.02	1.00	10.0	Primary	Pass
Alkalinity, Bicarbonate	Wet Chemistry	mg/L as $CaCO_3$	2	232	N/A	N/A	N/A
Alkalinity, Total	Wet Chemistry	mg/L as $CaCO_3$	2	232	N/A	N/A	N/A
Carbonate	Wet Chemistry	mg/L as $CaCO_3$	2	U	N/A	N/A	N/A
Hydroxide	Wet Chemistry	mg/L as $CaCO_3$	2	U	N/A	N/A	N/A
Corrosivity (calc.)	Wet Chemistry	SI unit	N/A	1.0	N/A	N/A	N/A
Conductivity, @ 25°C	Wet Chemistry	µS/cm	1	725	N/A	N/A	N/A
Hardness[3]	Wet Chemistry	mg/L as $CaCO_3$	1	323	N/A	N/A	N/A
pH	Wet Chemistry	Standard Units	0.1	8.2	6.5 < pH < 8.5	Secondary	Pass
Sodium Absorption Ratio	Wet Chemistry	N/A	N/A	0.56	N/A	N/A	N/A
Total Dissolved Solids	Wet Chemistry	mg/L	10	454	500	Secondary	Pass
Gross Alpha Activity	Radiochemistry	pica/L	2	5.4	15.0	Primary	Pass
Gross Beta Activity	Radiochemistry	pCi/L	2.2	5.4	50.0	Primary	Pass
Uranium	Metals Analysis	mg/L	0.0001	0.0034	0.030	Primary	Pass

(1) The *Detection Level* is the minimum concentration at which the analyte must be present to be detected by the laboratory testing method.
Result of "u" = analyte not detected at level equal or above the detection level shown.

(2) *Primary* = The threshold indicated is a *Primary* standard and is enforceable on community water systems; *Seconoary* = The threshold indicated is a non-enforceable standard on community water systems and is the suggested contaminant level to reduce health risks and/or improve aesthetic qualities of water such as taste, odor, and color. Private wells serving less than 15 connections or 25 people are NOT considered to be community water systems and therefore not under the jurisdiction of agencies regulating drinking water such as the EPA and CDPHE. The community water system standards are presented fo sake of reference for risk evaluation to human health and other aesthetic qualities shown.

(3) Hardness Scale:

Soft	<75
Moderately Hard	75-120
Hard	120-200
Very Hard	>200

Water Quality Results
Chris Janusz

Analyte	Category	Units	Detection Level[1]	Result	Threshold	Regulation[2]	Status
Arsenic	Metals Analysis	mg/L	0.0005	0.001	0.01	Primary	Pass
Cadmium	Metals Analysis	mg/L	0.005	U	0.01	Primary	Pass
Calcium, dissolved	Metals Analysis	mg/L	0.1	87	N/A	N/A	N/A
Copper	Metals Analysis	mg/L	0.02	U	1.3	Primary	Pass
Iron *	Metals Analysis	mg/L	0.02	0.24	0.30	Secondary	Pass
Lead	Metals Analysis	mg/L	0.0001	0.0002	0.015	Primary	Pass
Magnesium	Metals Analysis	mg/L	0.2	25.6	N/A	N/A	N/A
Manganese	Metals Analysis	mg/L	0.005	U	0.050	Secondary	Pass
Sodium	Metals Analysis	mg/L	0.2	22.9	N/A	None	Pass
Zinc	Metals Analysis	mg/L	0.01	U	5.0	Secondary	Pass
Chloride	Wet Chemistry	mg/L	2.5	28.9	250	Secondary	Pass
Coliforms, fecal	Wet Chemistry	#/100 ml	1	0	1	Primary	H
Fluoride	Wet Chemistry	mg/L	0.25	0.33	4.0	Primary	Pass
Sulfate	Wet Chemistry	mg/L	2.5	120	250	Secondary	Pass
Nitrate	Wet Chemistry	mg/L as N	0.02	1.00	10.0	Primary	Pass
Nitrite	Wet Chemistry	mg/L as N	0.01	U	1.0	Primary	Pass
Total Nitrate and Nitrite	Wet Chemistry	mg/L as N	0.02	1.00	10.0	Primary	Pass
Alkalinity, Bicarbonate	Wet Chemistry	mg/L as $CaCO_3$	2	232	N/A	N/A	N/A
Alkalinity, Total	Wet Chemistry	mg/L as $CaCO_3$	2	232	N/A	N/A	N/A
Carbonate	Wet Chemistry	mg/L as $CaCO_3$	2	U	N/A	N/A	N/A
Hydroxide	Wet Chemistry	mg/L as $CaCO_3$	2	U	N/A	N/A	N/A
Corrosivity (calc.)	Wet Chemistry	SI unit	N/A	1.0	N/A	N/A	N/A
Conductivity, @ 25°C	Wet Chemistry	µS/cm	1	725	N/A	N/A	N/A
Hardness[3]	Wet Chemistry	mg/L as $CaCO_3$	1	323	N/A	N/A	N/A
pH	Wet Chemistry	Standard Units	0.1	8.2	6.5 < pH < 8.5	Secondary	Pass
Sodium Absorption Ratio	Wet Chemistry	N/A	N/A	0.56	N/A	N/A	N/A
Total Dissolved Solids	Wet Chemistry	mg/L	10	454	500	Secondary	Pass
Gross Alpha Activity	Radiochemistry	pica/L	2	5.4	15.0	Primary	Pass
Gross Beta Activity	Radiochemistry	pCi/L	2.2	5.4	50.0	Primary	Pass
Uranium	Metals Analysis	mg/L	0.0001	0.0034	0.030	Primary	Pass

[1] The *Detection Level* is the minimum concentration at which the analyte must be present to be detected by the laboratory testing method.
Result of "u" = analyte not detected at level equal or above the detection level shown.

[2] *Primary* = The threshold indicated is a *Primary* standard and is enforceable on community water systems; *Seconoary* = The threshold indicated is a non-enforceable standard on community water systems and is the suggested contaminant level to reduce health risks and/or improve aesthetic qualities of water such as taste, odor, and color. Private wells serving less than 15 connections or 25 people are NOT considered to be community water systems and therefore not under the jurisdiction of agencies regulating drinking water such as the EPA and CDPHE. The community water system standards are presented fo sake of reference for risk evaluation to human health and other aesthetic qualities shown.

[3] Hardness Scale:

Soft	<75
Moderately Hard	75-120
Hard	120-200
Very Hard	>200