

STATE OF ALASKA 34076 DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND & WATER Alaska Hydrologic Survey

WATER WELL LOG Revised 08/18/2016

North Stope Borough Subdivision Block Lot Property Owner Name & Address Longitude Lo	Drilling Starte	ed:/	/	Comple	eted: <u>3 / 19 / 2010</u> Pump Install://
Well location: Latitude 70:51011600000000000000000000000000000000	City/Borough	Subdivis	ion	Block	Lot Property Owner Name & Address
BOREHOLE DATA: (from ground surface) Section 05 Sec	North Slope Borough				Eni Petroleum,
Doriging method: Air rotary Dable too Other				•	
Suggest 1.M. Hanna's hydrogeologic classification system https://mv.ngwa.org/NC. Product?id=s165000008/bubla3A) Dopth	Meridian U Towns	hip <u>013N</u> Ran	ge <u>009E</u>	Section	
Commercial Observation/Monitoring Test/Exploratory, Cooling, Product/Id=a18500000068YubsAdd					<u>Drilling method:</u> ■Air rotary, □Cable tool, □Other
Depth From To					Well use: ■Public supply, □Domestic, □Reinjection, □Hydrofracking
pad gravel fill 0 2 2 Heating, Geothermal Exploration, Other Fluids used: small gravel: gray black, sandy/silry, dry 2 18 8 Depth of hole:	nttps://my.ngwa.org/NCFrout	dct:1u=a 1830000			☐Commercial, ☐Observation/Monitoring, ☐Test/Exploratory, ☐Cooling,
Small gravel: damp					☐Irrigation/Agriculture, ☐Grounding, ☐Recharge/Aquifer Storage,
Small gravel: damp black muck: silty, organics, wet 20 24 clay: black, silty, gravelly, dry 24 43 muck: black, silty, gravelly, dry 24 43 small gravel: black, silty-mucky, wet 51 59 small gravel: black, silty-mucky, wet 51 59 small gravel: very sandy, water bearing - 5gpm 59 71 small gravel: very	pad gravel fill		0	2	☐ Heating, ☐Geothermal Exploration, ☐Other
Casing type: A538 Steel Casing thickness: 375 inches Casing depth: 76 inches C	small gravel: gray black, sa	andy/silty, dry	2	18	
black muck: sitty, organics, wet 20 24 43 classing diameter: 14 inches Casing depth: 76 ft liameter:inches muck: black, sitty/clayey, pebbles, wet-runny 43 51 Note: 14 casing to 30. 8° casing to 78. small gravel: black, sitty-mucky, wet 51 59 small gravel: black, sitty-mucky, wet 51 59 small gravel: very sandy, water bearing - 5gpm 59 71 Screen start: 70 ft, Screen stop: 76 ft, Perforated_Ves_No screen type:open endOpen holot_©other screened screen type:oscreen type:oscreen mesh size:06	ŭ .		18	20	• •
clay: black, sitty, gravelly, dry 24 43 Liner type: Depth: ft Diameter: inches muck: black, sitty/clayey, pebbles, wet-runny 43 51 small gravel: black, sitty-mucky, wet 51 59 small gravel: black, sitty-mucky, wet 51 59 small gravel: very sandy, water bearing - 5gpm 59 71 81 Well intake opening type: Open end. Open hole, Open hole, Open hole, Open hole, Open hole, Open hole, Open end. Open end. Open hole, Open end. Open end. Open hole, Open end. Open end. Open hole, Open end. Open end. Open end. Open hole, Open end. Open end. Open hole, Open end. Open	black muck: silty, organ	nics, wet	20	24	7 **
Small gravel: black, sitty-mucky, wet 51 59 Small gravel: very sandy, water bearing - 5gpm 59 71 Screen mesh size: .00 Screen start: 70	clay: black, silty, grav	elly, dry	24	43	
Small gravel: very sandy, water bearing - 5gpm 59 71 water gravel gray black, 20-30% sand-coarse, good saturation 71 81 Perforation description: Perf from: ht, Perf to: ht. Gravel packed layes looked layes looke	muck: black, silty/clayey, pebb	oles, wet-runny	43	51	
small gravel: very sandy, water bearing - 5gpm 59	small gravel: black, silty-	-mucky, wet	51	59	· · · · · · · · · · · · · · · · · · ·
Perforation description:	small gravel: very sandy, water	bearing - 5gpm	59	71	
Gravel packed \[\] \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	water gravel: gray black, 20-30% sand-coa	arse, good saturation	71	81	
Note: Static water (from top of casing): 40					
Static water (from top of casing): 40ft on/ Artesian well					Gravel packed ■Yes ■No Gravel start: ft , Gravel stop: ft
Pumping level & yield: 2.45 feet after 24 hours at 40 gpm Method of testing; submersible pump Development method: air surge					
Method of testing: submersible pump Development method: air surge Recovery rate:gpm Grout type: bentonite					<u> </u>
Development method: air surge Duration: Recovery rate: gpm Grout type: bentonite Volume 3 sacks Depth: From ft, To ft Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well location (include road names, buildings, etc.): Include description or sketch of well log tesubnited depth:					; , , , , , , , , , , , , , , , , , , ,
Recovery rate:gpm Grout type: bentonite					
Grout type: bentonite					
Depth: Fromft, Toft Include description or sketch of well location (include road names, buildings, etc.): Final pump intake depth:ft Model:					
Pump size:					Depth: Fromft, Toft
Pump size:		well location (inc	clude road	names,	Final pump intake depth: ft Model:
Method of disinfection: Was water quality tested? Yes No Water quality parameters tested: Well driller name: Wayne Westberg	buildings, etc.):				
Was water quality tested? Yes No Water quality parameters tested: Well driller name: Wayne Westberg. Company name: M-W DRILLING. Mailing address: PO BOX 110378. City: ANCHORAGE State: AK Zip: 99511 Phone number: (907) 945 - 3287 Driller's signature: Date: / / Anchorage Municipal Code 15.55.060(l) and North Pole Ordinance 13.32.030(D) require that a copy of this well logs be submitted using the online well log reporting system available at: https://dnr.alaska.gov/welts/ OR email electronic well logs to Was water quality tested? Yes No Water quality parameters tested: Well driller name: Wayne Westberg. City: ANCHORAGE State: AK Zip: 99511 Phone number: (907) 945 - 3287 Driller's signature: Date: / / Anchorage Municipal Code 15.55.060(l) and North Pole Ordinance 13.32.030(D) require that a copy of this well log be submitted to the Development Services Department/City within 30 days of well completion. City Permit Number: Date of Issue:/					Was well disinfected upon completion? Yes ■ No
Water quality parameters tested: Well driller name: Wavne Westberg					
Water quality parameters tested: Well driller name: Wavne Westberg					Was water quality tested? Yes No
AS 41.08.020(b)(4) and AAC 11 AAC 93.140(a) require that a copy of the well log be submitted to the Department of Natural Resources within 45 days of well completion. Well logs may be submitted using the online well log reporting system available at: https://dnr.alaska.gov/welts/ OR email electronic well logs to Well timler Hathe: Matwissawa. Company name: Mi-W DRILLING Mailing address: P.O. BOX. 110378. City: ANCHORAGE State: AK Zip: 99511 Phone number: (907) 945 - 3287 Driller's signature: Date:// Anchorage Municipal Code 15.55.060(I) and North Pole Ordinance 13.32.030(D) require that a copy of this well log be submitted to the Development Services Department/City within 30 days of well completion. City Permit Number: Date of Issue://					Water quality parameters tested:
Mailing address: PO.BOX.110378 City: ANCHORAGE State: AK Zip: 99511 Phone number: (907) 945 - 3287 Driller's signature:					Well diller flattle. Waxie Westword
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OR email electronic well logs to City Permit Number: Date of Issue://	https://dnr.alaska.gov/we	elts/			
					City Permit Number: Date of Issue:/
	dnr.water.reports@alask	a.gov			Parcel Identification Number:



Department of Natural Resources Division of Mining, Land & Water 550 w 7th Ave., Suite 1020 Anchorage, AK 99501-3562 dnr.water.reports@alaska.gov



Department of Environmental Conservation Division of Environmental Health, Drinking Water Program 555 Cordova Street Anchorage, AK 99501

dec.eh.drinkingwater.reports@alaska.gov



	Well Record	of Decommissioning							
This form is intended t	to convey information regarding the decomm	nisioning of a water well as required by	both DEC	C and DNR. A	dd additional datasheets as nec	essary.			
Well Decommissioner or Contractor			Well	and Owner I	Particulars *				
Name:	Owner's nan	me and address: ENI Petroleun	1						
Company: M-W Drilling, Inc.	Well location - St	treet & number: Oliktok Point,	North	Slope, A	laska				
Address: 12200 Avion Street	Well location - Subdivisi	ion, Lot & Block:							
(continued): Anchorage, AK 99516	Meridian:	Township: R	ange:		Section:	Quarters:			
Phone: 907-345-4000	GPS (to 5 places): Latitude:	70.510036	Lo	ongitude:	-149.869345	Datum:			
Email: mw@mwdrillinginc.com	Well Name or Number:	Camp Well #02							
Please check all boxes that apply and provide all requested informat	tion. Do not check boxes that do not apply.	Note, Do not enter locational i				elow.			
Details of Former Well		Former Well Description (No	regiure	d if original v					
Public water system? (See note **) Yes: X No: Original	l Driller's Name:				Well depth (ft bis): 80	Date of completion	: .	4_10	2010_
If so, PWSID number: Well	Type Drilled? Yes: χ No:	Finish Cased? Yes: X	No:	N/A Unknown	Static water (ft bls): 29	Flowing artesian?	Yes:	No: X	N/A Unknown
Single Family Domestic,? Yes: No:	Driven? Yes: X No:	Capped? Yes: X	No:	N/A Unknown	Bedrock (ft bls): no	Flood prone site?	Yes:	No: X	N/A Unknown
Commercial/Fishery? Yes: X No:	Jetted? Yes: No: X	Screened? Yes: X	No:	N/A Unknown	Casing type: steel_	Well condition?	Good: X	Poor:	N/A Unknown
Irrigation/Agricultural? Yes: No:	Dug? Yes: No: χ	Perforated? Yes:	No: X	ti/A Unknown	Diameter (inches): 8	Grouted?	Yes: X	No:	N/A Unknown
Heating / Cooling? Yes: No:	Unknown? Yes: No:	Well liner present? Yes:	No: X	N/A Unknown	Stickup (ft): 1.7	Well house?	Yes:	No: X	N/A Unknown
Public Water System decommissioning may require additional	documentation, please contact DEC in this re	egard.							
Decommissioning notes: R	eason for well_decommissioning;				ecommissioning process				
manage metal reger amb and permanents membrane	ut of use	Casing cut below grade? Yes: X	No:	N/A Unknown	Well disinfected prior to	decommissioning?	Yes:	No:X	N/A Unknown
approved methodes of decommissioning the well,		Casing fully removed? Yes:	No: >	X Unknown	Plumbing rem	oved from casing?	Yes: X	No:	N/A Unknown
Casing cut-off 2' below grade,		Casing filled with bentonite? Yes: X	No:	N/A Unknown	Liner	r (if any) removed?	Yes:	No:	N/A UnAmount X
casing filled with 3/8 " bentonite		Casing welded closed? Yes: X	No:	N/A Unknown	Electric wiring re	emoved from site?	Yes: X	No:	N/A Unknown
chips, screen filled with sandy	Excavation and Fill Details	Borehole refilled? Yes:	No:	N/A Unknown	Attached a	n original well log?	Yes: X	No:	N/A Unknown
gravel, plate welded on Excava	ation Depth (ft)? 2	Screened area filled with gravel? Yes: X	No:	N/A Unknown	Well	l log listed at DNR?	Yes: X	No:	N/A Unknown
top of casing, chips mounded on	Type of fill used? Bentonite, gravel	Perforated area filled with gravel? Yes:	No:	N/A Unknown	Local au	uthorities notified?	Yes:	No:	N/A Ur A nown- X
top of plate, pit back filled to grade.	me of fill (cu ft)?	Excavated pit refilled? Yes: X	No:	N/A Unknown	DEC notified of	decommissioning?	Yes: X	No:	N/A Unknewn
# Bags of be	entonite in casing? <u>46</u>	Pit area mounded? Yes: X	No:	N/A Unknown	DNR notified of	decommissioning?	Yes: X	No:	N/A Unknown
		Signatures (*** => are required)				11/1			
Owner ! David Hait	operations Mar O	Decommisi	oner / Co	ontractor***:	Main 4	Mutter	2		
Date: 6 /	121			Date:	5 / 8	2011			
1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regula 2) Attach an original water well log, If available. A blank water well log form is available for		but the original water well log is missing.	F		schematics and photos to furth				

3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.

4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

impact the public water supply.

M-W Drilling, Inc.

◆P.O. Box 110389 ◆ Anchorage, AK 99511 ◆ ◆907-345-4000 ◆ 907-345-3287 Fax ◆

Job No. 10-104

TO

GROUNDWATER WELL AS-BUILT & LOG

V	Vell Own		NI Petroleum Use of Well: Public
Legal De	escriptic	on: O	liktok Point Pad Well No. 2, North Slope, AK (OPP2)
		-	
			CONSTRUCTION
Delli Mari	t la maria	A.s. Detail	
Drill Mer Casing S		8 5/8 *	ry with casing hammer Hole Size & Depth: 87.57 Cased to: 76.12 Material: A53 Steel GR B Wall: 0.250*
Cosing (14'	30.26 A53 Steel GR B 0.375"
Well Co	npletion	n: (Open end Screen X Perforated Method:
Screen	descript	ion: R	iser & K packer. 70 to 76: 0.060" slot 316SS to 86.51 tailpipe & plates to 87.5
Grout No	ntes:	(3) Sac	k(s) of Bentonite - dry grout outside 14' surface casing
Well De	_		r surge - cleaned up rapidly - no sand.
Well Dis			Notes:
Yield tes	_		SPM for 24 hour(s) with 2.45 of drawdown (DD) from static level(SWL). Static Water Level (SWL): 40
Method: Start Da		mersible 3/	12/10 Completion Date: 3/19/10
Test Pur			3/21 - 22/10 Final Pump Install Date:
			WELL LOG (Well drilled on 45° slant)
Depth is			Details of formations penetrated, size of material, color and miscellaneous details.
	f casing		
0	TO	4.5	Casing Stick Up
4.5	TO	6.5	Pad gravel fill
6.5	TO	22	Small gravel: gray black, sandy/silty, dry
22	TO	24	Small gravel: damp
24	TO	28	Black muck: silty, organics, wet
28	TO	47	Clay: black, silty, gravelly, dry
47	TO	54	Muck: black, silty/clayey, pebbles, wet-runny
54	TO	63	Small gravel: black, silty-mucky, wet
63	TO	75	Small gravel: very sandy, water bearing - 5 GPM
75	TO	85	Water gravel: gray black, 20-30% sand-coarse, good saturation
70	TO		
	TO		WAYNE E. WESTBERG
	TO	1	President Mew Company
			Higher Fernier Master Gr. unaway- Character
	TO		La rien Court La 🚓 🐧 nage
	TO		

Note: recommend pump intake = 50' max

M-W DRILLIN		o 11 o -61-			Detail	1/27/10
	Well A	s-Built Profile			Date: 3	
Client: ENI Petrole	um				Loc'n:	oint, N. Slope
GENERAL					85' S of	NW corner Pipe
Owner: ENI City: Oliktok Point	Engineer County: No	rth Slope	State: AK			
Contact: Don Graika		Phone: 670-85	501		Well No.:	OPP2
Well Used For: Public Date Drilled: 3/20/10	Da	e in Service:			All depths are	from top of casing:
CONSTRUCTION					Well drilled in	45' slant
Drill Method: Air Rotary Type Screen: Y Wire Drill Fluid Type. Air Chemicals Used: None	Aquifier Type: Gravel Pac		TD: 87.5 ft Other: Natural rge		ન્ય.5' G5	-
MATERIALS						
Surface Csg OD: 14" Prod Csg OD: 8 5/8" Screen OD: 6T Packers/Plugs. Fig K	Depth: 30.26 Depth: 76.1 Slot: 0.060"	7 Matl. A53	Seal. 3 Seal: til: 316SS	Bent granules	30.26' Surface Casing	
ORIGINAL TEST DA	ГА				8" Borehole Diam.)
Static Level: 26' GMP: 40 Specific Capacity: 16.3 Turbidity:		Recovery	Drawdown: y: 6 minutes		8 5/8" Casing Size	
PUMP & MOTOR						infi
Type: Pump Mfg: Bowl OD: Column OD: Motor Mfg:	GMP: Model No: Stgs: Tube: HP:	TDH: Serial I HD/Stg: Shaft: RPM:	Pump Eff: Wire Size: Volt:	•	Recommend 50° Pump Intake	
Amps (Lock):	(Full Load)	SF	PF;	Eff:	76' Top screen	
Recent Repair Histo	ry/Treatment/Te	st Data:				**************************************
Date last serviced: SWL: PWL DD: Last Treated: Results:	Specific Capacity:		PSI. Duration:		86 5 Bottom Screen	and an analysis of the second
					87.5 TD Borehole	

M-W Drilling, Inc. TEST PUMP REPORT

			Sheet <u>1</u> Date: <u>3/21/1</u>	of 2 10
Conducted by:			M-W Job#:	10-104
Owner: ENI Pet				
Address: Oliktol	k Point Pad - North Slope, A	K		
Well Location: ()PP Well No. 2 Site (OPP2)			
Well Info:	Total Depth: 87.5	Depth of Casing: 76.12	Screen: From 76	To 86.5
	Casing Size: 8 5/8"		Screen Slot: 0.060"	
	Remarks: 316SS, 45°	slant well, -20°F +		
Pump Info:	Intake depth: 43	Pump size: 5HP	Water level meas.: Electric	
	Make: Grunfos		HP/Volt: 230V	
	Static water level: 25.95		GPM, max, drawdown:	2.45
Mise Pump Info:	Pump on: Date: 3/21/1	0900 Time: 0900	Mtr Reading:	
•	Duran offi Datas 3/22/1	0 Time: 0900	Mtr Reading:	

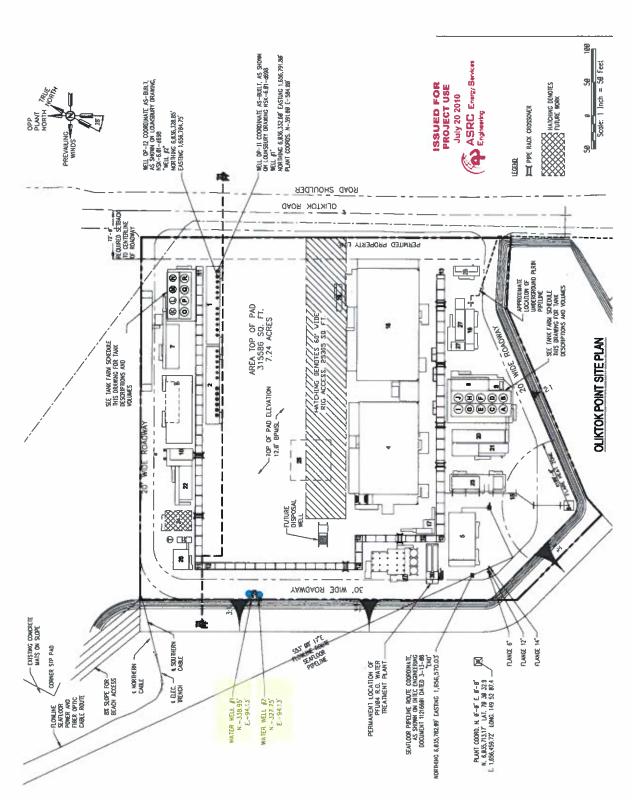
Time		Water	Water Flow i Remarks I		Γin	10	Water	Flow	Remarks
Clock	Elpsd	Level	GPM	!	Clock	I Ipsd	l.evel	GPM	
0900	0	25.95		Start		75	28.32		
	2	27.3	40			90	28,33		
	4	27.5	200			105	28.35		
	6	27.5			1100	120	28.26		
	8	27.75			30		28.32	40	
	10			Indicator freezing	1200		28.35		
	12	<u> </u>			30		28.37		
	14				1300		28.38		
	16	27.91			30	Ĺ	28.40		
94	18				1400		28.40		
	20	28.03			30		28.40		
	25	28.04			1500	<u> </u>	28.40		
	30	28,13			30		28.40		
	35	27.91			1600	-11	28.40		1
	40	28.04			30		28,40		
29	45	28.11	1		1700		28,40		
	50	28,11	1		1800		27.91		
- 18	55	28.24			1900		27.90		
1000	60	28.3			2000		28.02		

M-W Drilling, Inc. TEST PUMP REPORT

Continuation Sheet

Owner: E	NI Petroleum	Sheet	2	of <u>2</u>
		M-W	Job No.	10-104

Time		Water	Flow	Remarks	Tin	ne	Water	Flow	Remarks
Clock	Llpsd	Level	GPM	PM Clock Upsd Lev		Level .	GPM		
			†·			 			Recovery
2100		28.12		1	0900	0.05	27.81	0	
2200		28.02			01		27.41		<u> </u>
2300		28.02				0.05	27.21		
2400		28.03			02		26.99		
				3/22/10		0.05	26.43		
0100		28.04			03		26.41	į	
0200						0.05	26.32		
0300					04		26.18		
0400						0.05	26.18		The state of the s
0500					05	1	26.17		
0600			 		,	0.05	26.14		
0700			-		06		26.13		
0800		·	1						
0900		28.08		SHUTDOWN					
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—— - -			!		0==01				
		4.44.44		,	1100			<u></u>	Samples to AK Air
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101					1,00				
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OPP Water Wells Location Map