

1530'

70%

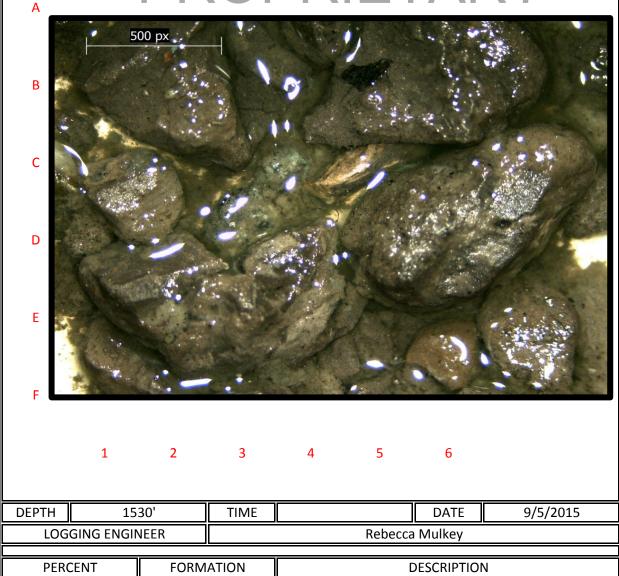
30%

SLTST

CMT

COMPANY: Shell E&P RIG NAME: Polar Pioneer	
WELL NAME: OCS-Y-2321 #001 PROSPECT NAME Burger J	
LOCATION: Chukchi Sea COUNTY / PARISH: Offshore	
STATE: Alaska API NUMBER: 55-352-00004-00	
RSO NUMBER: WBS / AFE NUMBER: 30230984	

<u>PROPRIETARY</u>



It gry, v sft, med grn, tr qrtz.

1560'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<text>

DEPTH	15	60'	TIME		DATE	9/5/2015	
LOG	LOGGING ENGINEER			Rebecca Mulkey			
PERC	CENT	FORMATION		IATION DESCRIPTION			
10	0%	CL	/ST It gry, v sft, v-fn gn, occ blky, wxy-e			, wxy-erthy, slty.	
				tr cmt			

1590'

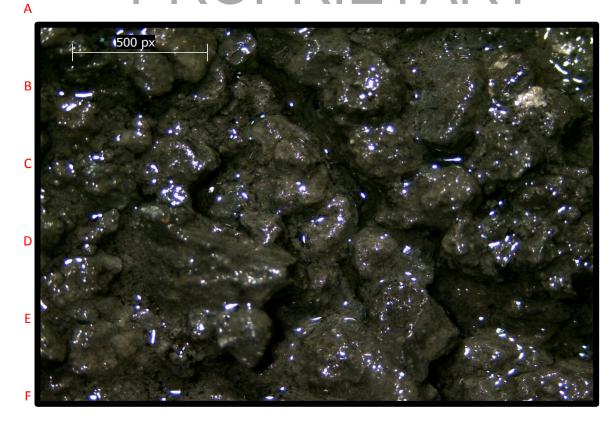
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<text>

DEPTH	15	90'	TIME		DATE	9/5/2015	
LOG	GING ENGI	NEER		Rebecca Mulkey			
PERC	CENT	FORM	IATION DESCRIPTION			N	
10	0%	CL	/ST It gry, v sft, v-fn gn, occ blky, wxy-er			, wxy-erthy, slty.	

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY

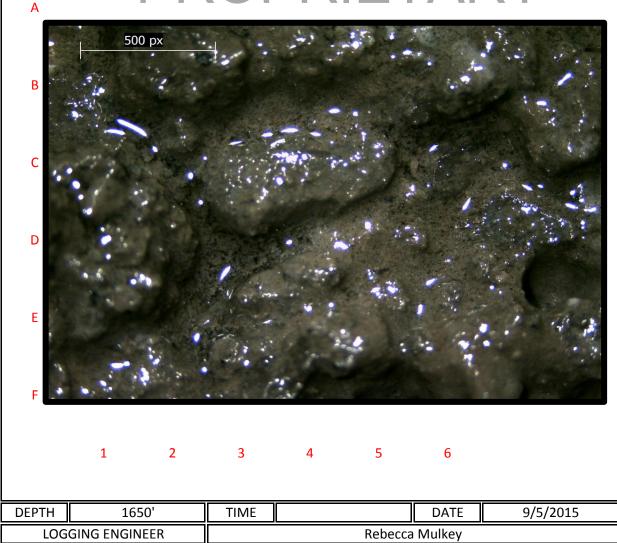


DEPTH	16	20'	TIME		DATE	9/5/2015
LOG	GING ENGI	NEER				
PERC	ENT	FORMATION		1ATION DESCRIPTION		
10	0%	CL	YST	med-lt gry, v sf	t, v-fn gn, o	cc blky, tr sltst.

1650'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



PERCENT	FORMATION	DESCRIPTION
100%	CLYST	med-lt gry, v sft, v-fn gn, occ blky, tr sltst.

1680'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

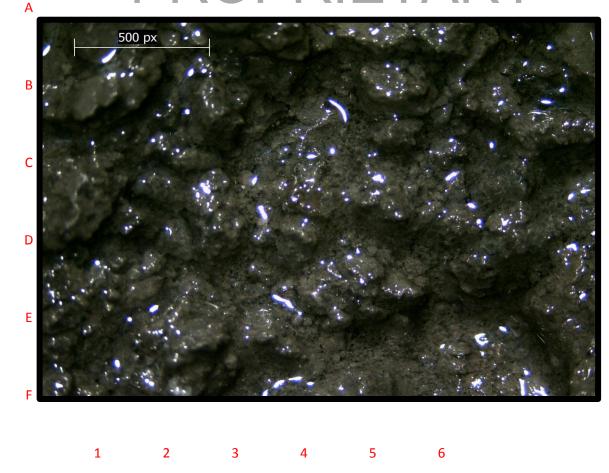
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DEPTH	168		TIME			DATE	9/5/2015
LOG	GING ENGIN	JEER			Rebecca	Mulkey	

PERCENT	FORMATION	DESCRIPTION					
100%	CLYST	med-lt gry, v sft, v-fn gn, occ blky,					
		wl srt, tr sltst.					

1710'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	17	10'	TIME		DATE	9/5/2015	
LOGGING ENGINEER			Rebecca Mulkey				
		1					
PERC	ENT	FORM	ATION	DESCRIPTION			
100	%	CLYST		med-lt gry,	med-lt gry, v sft, v-fn gn, occ blky,		
			wl srt, occ lithic, tr sltst.				

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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С							
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E							
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DEPTH	17	40'	TIME			DATE	9/5/2015
LOG	GING ENGI	NEER		Rebecca Mulkey			
			.				
PERC	PERCENT FORMATION			DESCRIPTION			
10	0%	NO SA	MPLE	due to computer error.			error.
				<u></u>			
L				II			

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

							30230301
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	1	2	3	4	5	6	
DEPTH	17	70'	TIME			DATE	9/5/2015
	GING ENGI						-,-,
100				Rebecca Mulkey			
PER	CENT	FORM	ATION	N DESCRIPTION			N
	0%		MPLE	due to computer error.			

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer			
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J			
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore			
STATE:	Alaska	API NUMBER:	55-352-00004-00			
RSO NUMBER:		WBS / AFE NUMBER:	30230984			
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DEPTH	18	00'	TIME		DATE	9/5/2015		
LOG	GING ENGI	NEER	Rebecca Mulkey					
PERO	CENT	FORM	IATION DESCRIPTION					
10	0%	CL	YST	med gry-lt gry, v s	ry, v sft, v fn grn, occ blky, well srt.			

1830'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

DEPTH	18	30'	TIME		DATE	9/5/2015		
LOGGING ENGINEER			Rebecca Mulkey					
PERC	CENT	FORM	ATION	DESCRIPTION				
90)%	CLYST		med-lt gry, v sft, v fn, occ blky,				
10)%	SLTST		lt gry, v sft, v fn.				

1860'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<text>

DEPTH	18	60'	TIME		DATE	9/5/2015	
LOG	GING ENGI	NEER		Rebecca	Rebecca Mulkey		
PERC	CENT	FORM	IATION		DESCRIPTION		
90)%	CLYST		lt gry- med g	lt gry- med gry, v fn, tr blky, sft-v sft,		
10)%	SST		lt gry, rnd-si	ubrnd, wl si	rt, tr lithinc.	

1890'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

DEPTH	18	90'	TIME		DATE	9/5/2015	
LOG	GING ENGI	NEER		Rebe	Rebecca Mulkey		
PERC	CENT	FORM	ATION	DESCRIPTION			
90)%	CLYST		lt gry- tan, v sft, fri, ang to blky,		ng to blky,	
10)%	SST		lt gr	y, rnd-subrnd,	wl srt,	

1920'

А

F

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

DEPTH	19	20'	TIME		DATE	9/5/2015	
LOG	GING ENGI	NEER		Rebecca	cca Mulkey		
PERC	CENT	FORM	ATION	C	DESCRIPTION		
10	0%	CL	YST	lt gry- lt tan, v sft, v fn, occ blky, fri, tr snd.		blky, fri, tr snd.	

1950'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<text>

DEPTH	19	50'	TIME		DATE	9/5/2015	
LOG	GING ENGI	NEER		Rebecca Mulkey			
PERC	CENT	FORM	ATION	C	DESCRIPTION		
10	0%	CL	/ST	lt gry, v sft, vfn, blky to	ry, v sft, vfn, blky to ang, occ lam, tr plty, fri, occ sno		

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

DEPTH	19	80'	TIME		DATE 9/5/2015		
LOG	GING ENGI	NEER		Rebecca	Rebecca Mulkey		
PERC	CENT	FORM	1ATION DESCRIPTION			N	
10	0%	CL	/ST	It-med gry, ang to blky, sft to v sft, occ lam, occ sno		ft, occ lam, occ snd.	

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer			
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J			
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore			
STATE:	Alaska	API NUMBER:	55-352-00004-00			
RSO NUMBER:		WBS / AFE NUMBER:	30230984			

	PROPRIETARY
А	
В	500 px
С	
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E	
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1	2	3	4	5	6

DEPTH	20	10'	TIME		DATE	9/5/2015		
LOG	LOGGING ENGINEER			Rebec	a Mulkey			
PERC	PERCENT FORMA				DESCRIPTIO	N		
80	30% CL`		/ST	lt-med gry,	sft- v sft, blky	r, erthy, tr sst,		
20%		LS	ST	crm-lt gry,	hrd-frm, fn s	ub-rnd grns,		
				erthy, ti	[.] blk chrt, occ	dol strgr.		

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

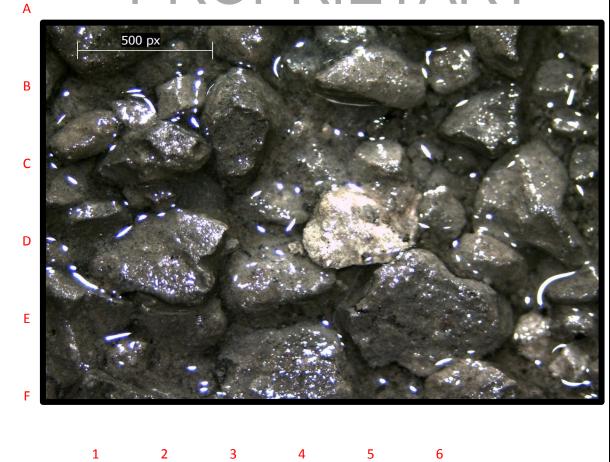
<figure>

DEPTH	20	2040'			DATE	9/5/2015			
LOGGING ENGINEER			Rebecca Mulkey						
PERC	PERCENT FORM			C	DESCRIPTIO	N			
90	90% CL		γst	lt-med gry, occ	lt tan, v sft,	blky, erthy-sm,			
10)%	LS	ST	crm-wht, hr	[.] d-frm, fn sւ	ıb-rnd grns,			
				erthy, tr	blk chrt, r o	dol strgr.			

2070'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<u>PROPRIETARY</u>

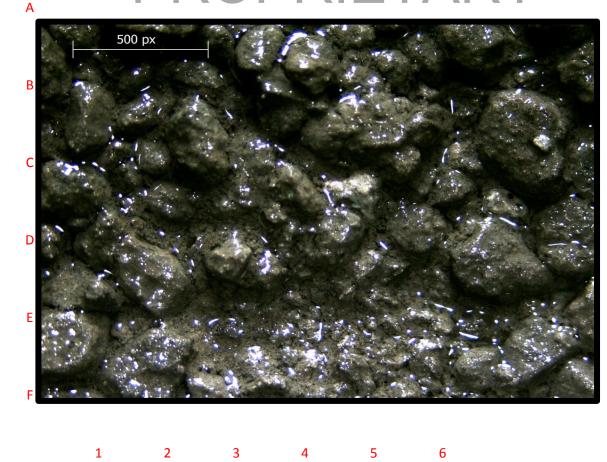


DEPTH	20	70'	TIME		DATE	9/5/2015	
LOGGING ENGINEER			Rebecca Mulkey				
PERC	PERCENT FORMATION DESCRIPTION			N			
95	95% CL		/ST	lt-med gry, occ	lt tan, v sft,	blky, erthy-sm,	
5	%	LS	ST	crm-wht, hr	[.] d-frm, fn sւ	ıb-rnd grns,	
				erthy, tr	[.] blk chrt, r d	dol strgr.	

2100'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

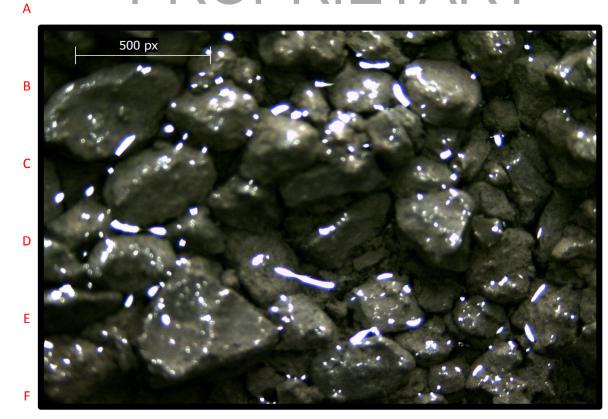
PROPRIETARY



DEPTH	21	00'	TIME		DATE	9/5/2015
LOGGING ENGINEER			Rebecca Mulkey			
PERCENT		FORMATION		MATION DESCRIPTION		
90	90% CL		/ST	lt-med gry, v fn, w	/l srt, arg, p	rly cmted, sft-vsft,
10)%	SL	rst	lt-me	ed gry, sft-	v sft,
				000	c crm ls strg	grs.

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	21	30'	TIME		DATE	9/5/2015
LOG	GING ENGI	NEER		Rebecca	Mulkey	
PERC	ENT	FORM	ATION	C	DESCRIPTIO	N
90	%	CL	YST	lt-med gry, v fn, w	/l srt, arg, p	rly cmted, sft-vsft.
10	%	SL	ГST	lt-me	ed gry, sft- v	/ sft.

F			
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984
		TDICT	

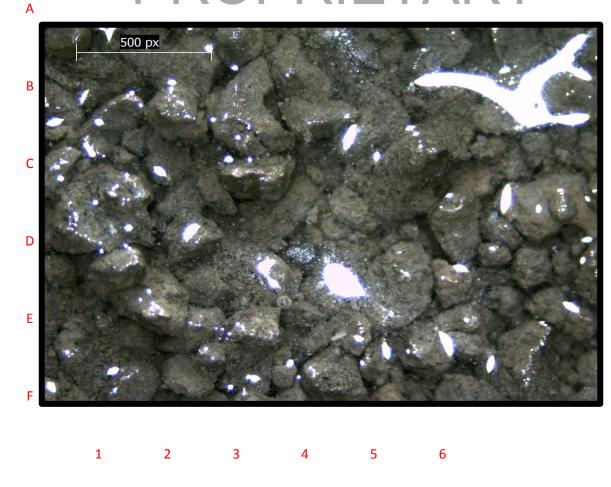
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DEPTH	21	60'	TIME		DATE	9/5/2015
LOG	GING ENGI	NEER		Rebecca	Mulkey	
PERC	CENT	FORM	ATION	C	DESCRIPTIO	N
90)%	CL	YST	lt gry, sft, i	mod blky, si	m to erthy.
10)%	SL	TST	lt-me	ed gry, sft- v	v sft.

2190'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	21	90'	TIME		DATE	9/5/2015
LOG	GING ENGI	NEER		Reb	ecca Mulkey	
		1		î		
PERC	CENT	FORM	ATION		DESCRIPTIO	N
90	%	CL	/ST	lt gry,	sft, mod blky, sr	n to erthy.
10	%	SL	rst		t-med gry, sft- v	/ sft.

2220'

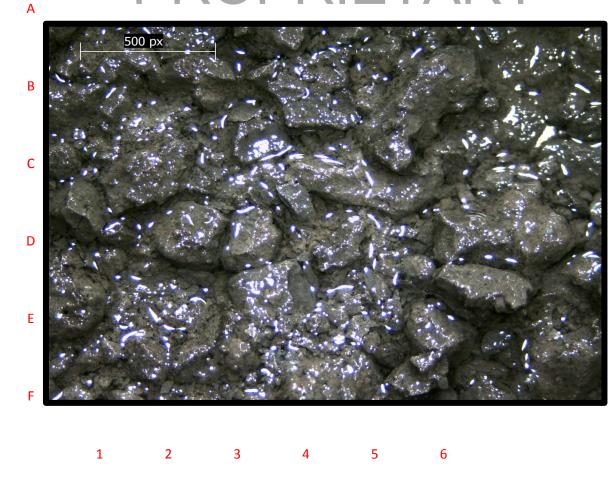
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

DEPTH	22	20'	TIME		DATE	9/5/2015
LOG	GING ENGI	NEER		Rebecca	a Mulkey	
PERC	CENT	FORM	ATION	[DESCRIPTIO	N
10	0%	CL	/ST	lt gry, sft, mod	blky, sm to	erthy, r sltst gr.

2250'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	22	50'	TIME		DATE	9/5/2015
LOG	GING ENGIN	NEER		Rebecca	ı Mulkey	
PERC	CENT	FORM	ATION	C	DESCRIPTIO	N
80)%	CL	YST	lt gry, v sft,	com slty gr	, mod blky,
				erthy	' to slty, v sl	i calc,
20)%	SL	TST	med g	ry, occ mot	t sltst.

|--|

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<text>

DEPTH	22	80' TIME			DATE	9/5/2015
LOGGING ENGINEER		Rebecca Mulkey				
PERC	ENT	FORMATION		DESCRIPTION		
90	%	CLYST		It gry, sft, com slty mtx, mod blky, erthy to slty, v sli c		erthy to slty, v sli calc,
10	%	SLTST		med g	ry, occ mott	sltst.

2310'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	23	10'	TIME		DATE	9/5/2015		
LOG	LOGGING ENGINEER			Rebecca Mulkey				
PERC	CENT	FORMATION		DESCRIPTION				
10	0%	CLYST		It gry, v sft, occ slty mtx, mod blky, erthy to sm.		blky, erthy to sm.		

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	23	40'	TIME		DATE	9/5/2015
LOGGING ENGINEER			Rebecca Mulkey			
PERG	CENT	FORMATION		DESCRIPTION		
10	0%	CLYST		It gry, mod sft, r slty mtx, mod blky, sm, occ mott.		

2370'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	23	70'	TIME		DATE	9/5/2015		
LOG	LOGGING ENGINEER		Rebecca Mulkey					
PERC	CENT	FORMATION		DESCRIPTION				
80	1%	CLYST		lt gry, mod sft, occ slty mtx, mod blky, r mott,		mod blky, r mott,		
				m	od calc, ertł	ıy.		
20	1%	SLTST		lt-med gry,sft-vsft.		/sft.		

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	24	00'	TIME		DATE	9/5/2015
LOGGING ENGINEER			Rebecca Mulkey			
PERC	CENT	FORMATION		DESCRIPTION		
80)%	CLYST		'ST It gry, mod sft, sli slty mtx, mod blky, r n		nod blky, r mott,
			S	l calc, erthy	<i>.</i>	
20)%	SLTST		lt-med gry,sft-vsft.		/sft.

2430'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	24	30'	TIME		DATE	9/5/2015
LOGGING ENGINEER			Rebecca Mulkey			
				r		
PERC	CENT	FORMATION		DESCRIPTION		
80)%	CLYST		It gry, mod sft, sli slty mtx, mod blky, occ mott,		od blky, occ mott,
				sl c	alc, rr blk la	im.
20)%	SLT	rst		alc, rr blk la ned gry,sft-v	

2460'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<text>

DEDTU	24	<u>col</u>				0/5/2015
DEPTH	24	60'	TIME		DATE	9/5/2015
LOGGING ENGINEER			Rebecca Mulkey			
				I		
PERC	CENT	FORMATION		FORMATION DESCRIPTION		N
90	1%	CLYST		CLYST It gry, v sft, sli slty mtx, mod blky.		, mod blky.
10	10% SLTST		lt-m	ned gry,sft-v	/sft.	

2490'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<figure>

DEPTH	24	90'	TIME		DATE	9/5/2015
LOGGING ENGINEER		Rebecca Mulkey				
PERC	CENT	FORMATION		DESCRIPTION		
90)%	CLYST		It-med gry, v sft, sli slty mtx, mod blky, occ nod,		od blky, occ nod, sm.
10)%	SLTST		lt-m	ned gry,sft-v	/sft.

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<figure>

DEPTH	25	20'	TIME		DATE	9/5/2015
LOGGING ENGINEER		Rebecca Mulkey				
PERCENT FORMATION		DESCRIPTION				
90)%	CLYST		It-med gry, fri, sli slty mtx, blky, occ nod, sm, sli		occ nod, sm, sli calc.
10)%	SLTST		lt-m	ned gry,sft-v	/sft.

2550'

А

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



DEPTH	2550'		TIME		DATE	9/5/2015	
LOGGING ENGINEER				Rebecca Mulkey			
PERCENT		FORMATION		DESCRIPTION			
80%		CLYST		lt-med gry, fri, sli slty mtx, blky, nod, sm, sli calc.			
20%		SLTST		lt-med gry,sft-vsft.			

2580'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	25	80'			DATE	9/5/2015
DEPTH	23	80	TIME		DATE	3/3/2013
LOGGING ENGINEER		Rebecca Mulkey				
PERC	PERCENT FORMA		ATION	C	DESCRIPTIO	N
80	80% CLYST It-med gry, mod sft, slty mtx, blky		x, blky, nod, sm.			
20	20% SL ⁻		IST	lt-m	ned gry,sft-v	/sft.

2610'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



		1.01					
DEPTH	26	10'	TIME		DATE	9/5/2015	
LOG	GING ENGI	NEER		Rebecca	ebecca Mulkey		
PERCENT FORMATION DESCRIPTION		FORMATION		N			
70	70% CLYST		/ST	lt-med g	ry, fri, blky,	nod, sm.	
30	0% SL		rst	lt-m	ned gry,sft-v	/sft.	

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	26	40'	TIME		DATE	9/5/2015		
LOG	LOGGING ENGINEER			Rebecca	ı Mulkey			
PERC	PERCENT FORMATION DESCRIPTION		١					
90	90% CLYST It-med gry, fri to frm, blky, nod		, sm, mott, slic calc.					
10	10% S		rst	lt-n	ned gry,sft-v	sft.		

2670'

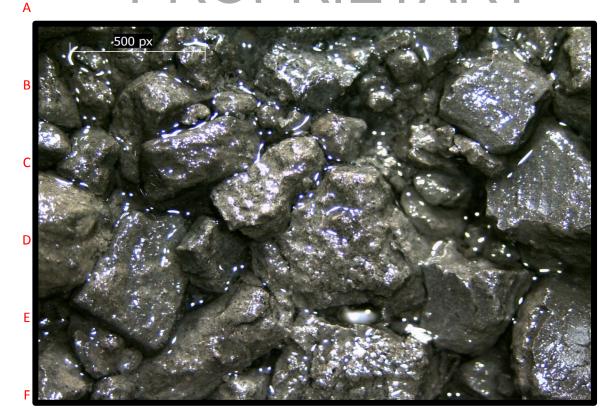
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<figure>

DEPTH	26	570' TIME			DATE	9/5/2015		
LOG	LOGGING ENGINEER			Rebecca	Mulkey			
PERC	PERCENT		ATION	C	DESCRIPTIO	N		
90	90% CLYST		It-med gry, fri to frn	n, blky, nod	, sm, mott, slic calc.			
10)%	SLTST		lt-m	ned gry,sft-\	/sft.		

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	27	00'	TIME		DATE	9/5/2015
LOGGING ENGINEER			Rebecca Mulkey			
PERCENT FORMATION				DESCRIPTIO	N	
90)%	CLYST		It-med gry, fri to frm, blky, nod, sm, mott, slic calc.		
10% SLTST		lt-m	ned gry,sft-v	/sft.		

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

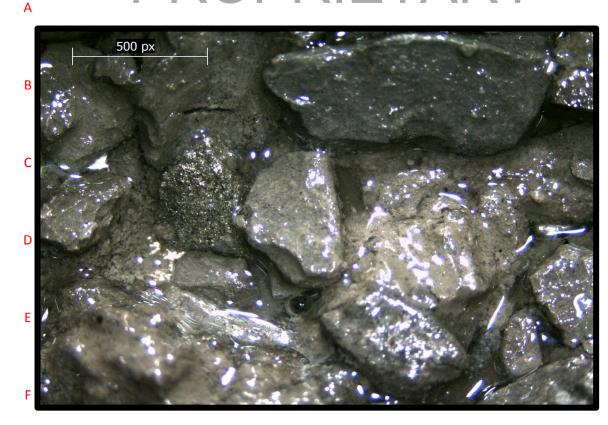
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DEPTH	27	30'	TIME		DATE	9/5/2015	
LOGGING ENGINEER			Rebecca Mulkey				
PERCENT FORM		ATION	TION DESCRIPTION				
80% CLYST		/ST	lt-med gry, fri to frm, blky, nod, sm.				
20% SLTST		rst	Lt-med gry,sft-vsft.				

2760'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	27	60'	TIME		DATE	9/5/2015
LOGGING ENGINEER			Rebecca Mulkey			
PERCENT FORMATION		ATION	DESCRIPTION			
20	20% CLYST		lt-med gry, v fn, wl srt, sft-vsft, tr pyr.			
80% SLTST		ſST	Lt-m	ned gry,sft-v	vsft.	

2790'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	27	90'	TIME		DATE	9/6/2015
LOGGING ENGINEER			Rebecca Mulkey			
PERCENT FORMATION			DESCRIPTION			
100% CLYST		YST	It-med gry,fim, blky, sm, tr nod, tr calc, tr sltst.			

2820'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<figure>

DEPTH	28	20'	TIME		DATE	9/6/2015			
LOGGING ENGINEER			Rebecca Mulkey						
PERC	PERCENT FORMATION			DESCRIPTION					
10	100% CLYST		lt-med gry,frm, blky, sm, tr nod, tr calc, tr sltst.						

2850'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	28	50'	TIME		DATE	9/6/2015	
LOGGING ENGINEER				Rebecca Mulkey			
PERC	CENT	FORMATION		IATION DESCRIPTION			
10	0%	CL	/ST	med-drk gry,frm, b	olky, sm, tr r	nod, tr calc, tr sltst.	

2880'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	28	80'	TIME		DATE	9/6/2015
LOGGING ENGINEER			Rebecca Mulkey			
PERC	CENT	FORMATION		IATION DESCRIPTION		
10	0%	CL	/ST	med-drk gry,frm, b	lky, sm, vsft	-sft, tr calc, tr sltst.

2910'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

DEPTH	29	10'	TIME		DATE	9/6/2015	
LOGGING ENGINEER			Rebecca Mulkey				
PERG	CENT	FORMATION		IATION DESCRIPTION			
10	0%	CL	YST	′ST med-drk gry, blky, sm, sf		-frm, tr calc, tr sltst.	

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



DEPTH	29	40' TIME			DATE	9/6/2015		
LOGGING ENGINEER			Rebecca Mulkey					
PERC	CENT	FORMATION		1ATION DESCRIPTION				
10	0%	CL	/ST	med-drk gry, sm, sft-frm, occ nod, tr calc, tr sltst.				

20	363	
23	202)

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	29	63'	TIME		DATE	9/6/2015	
LOGGING ENGINEER			Rebecca Mulkey				
PERC	CENT	FORMATION		IATION DESCRIPTION			
10	0%	CL	YST	med-drk gry, sm, sft-frm, occ nod, tr calc, occ slts		od, tr calc, occ sltst.	

HALLIBURTON

Sperry Drilling

PROPRIETARY Cuttings Report

Shell Offshore Inc. OCS Y-2321 #001 Burger J Posey Block 6912 API No. 55-352-00004-00

RIG: Polar Pioneer

SDL Personnel:

Craig Amos– Unit Manager Rebecca Mulkey, Ryan Lenberg– Logging Specialists

3000'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer				
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J				
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore				
STATE:	Alaska	API NUMBER:	55-352-00004-00				
RSO NUMBER:	RSO NUMBER: WBS / AFE NUMBER: 30230984						

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DEPTH	30	00'	TIME		DATE	9/12/2015		
LOG	GING ENGI	NEER		Ryan L	enberg	nberg		
-								
PER	CENT	FORM	1ATION DESCRIPTION					
10	0%	CL	YST	Lt gry, fri to mod fi	frm, blky, grty, mod calc tr sltst.			

3030'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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	1	2	3	4	5	6	
DEPTH	30	30'	TIME	<u> </u>		DATE	9/12/2015
	GING ENGIN		1	<u>IL</u>	Rvan I	Lenberg	
			JL				
	CENT		1ATION	DESCRIPTION			
10	0%	CL	YST	lt gry, m	lt gry, mod frm, blky, grty, sm slty mtx, calc, tr sltst.		
				ļ			

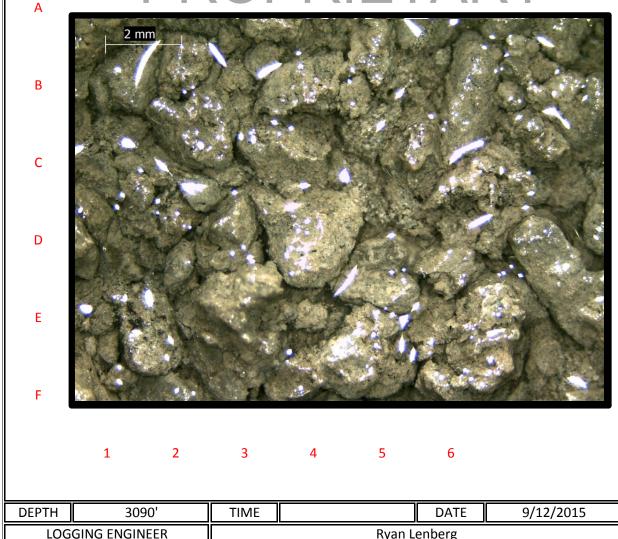
3060'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	30	60'	TIME			DATE	9/12/2015
LO	GGING ENGIN	NEER		Ryan Lenberg			
DEI	RCENT	EOPN	1ATION DESCRIPTION				
	90%		YST	N DESCRIPTION med to dk gry, fri to frm, blky, grty, sm slty mtx			
	10%		TST	sli calc			5
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3090'

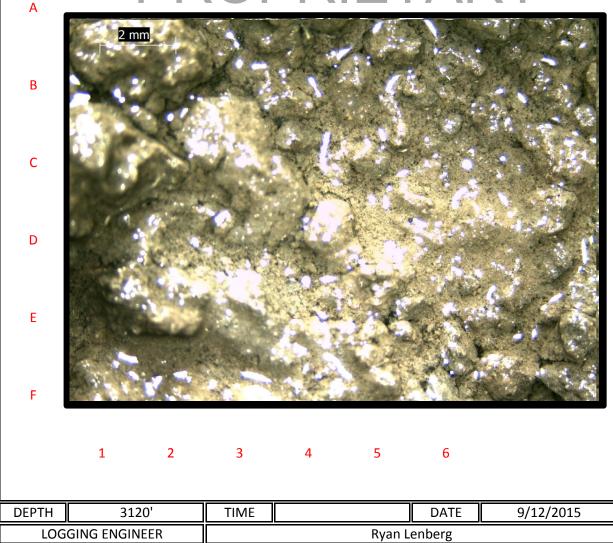
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



		Nyan Lenberg					
PERCENT	FORMATION	DESCRIPTION					
90%	CLYST	med to dk gry, fri to frm, blky, grty, sm slty mtx					
10%	SLTST	sli calc					

3120'

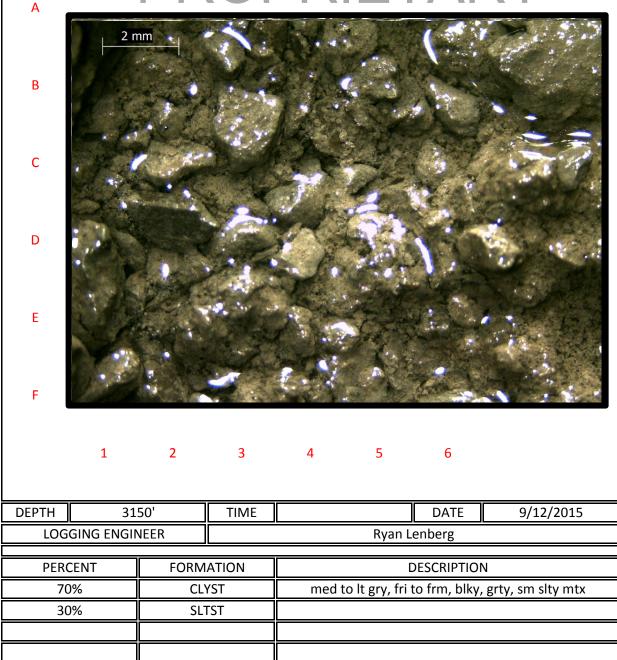
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



PERCENT	FORMATION	DESCRIPTION
80%	CLYST	med to It gry, fri to frm, blky, grty, sm slty mtx
20%	SLTST	tr calc

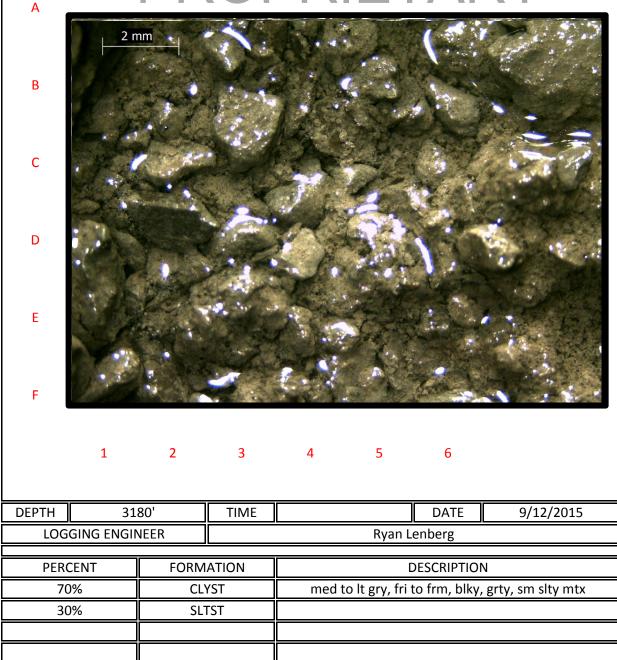
3150'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



3180'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



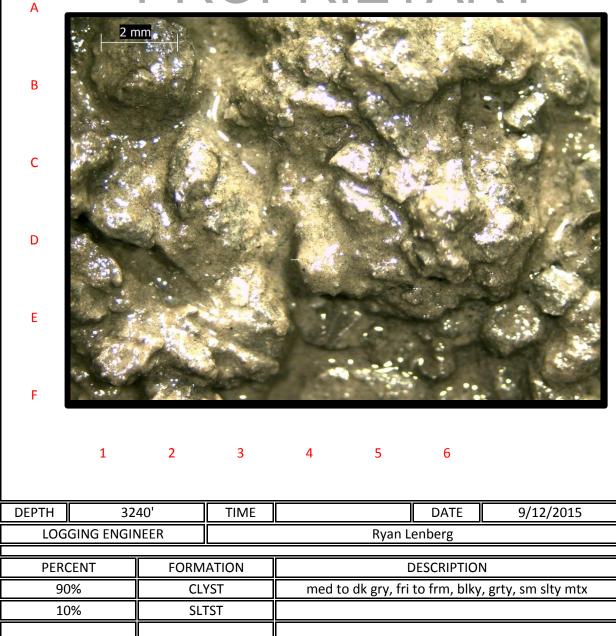
3210'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	32	10'	3 TIME	4		DATE	9/12/2015
DEPTH	GGING ENGI	10' IEER	TIME	4	Ryan L	DATE enberg	
DEPTH	32	10' JEER FORM	TIME		Ryan L	DATE enberg DESCRIPTIO	N
DEPTH LOO PEF	GGING ENGI	10' NEER FORM	TIME MATION LYST		Ryan L	DATE enberg DESCRIPTIO	
DEPTH LOG PEF	GGING ENGIR	10' NEER FORM	TIME		Ryan L	DATE enberg DESCRIPTIO	N

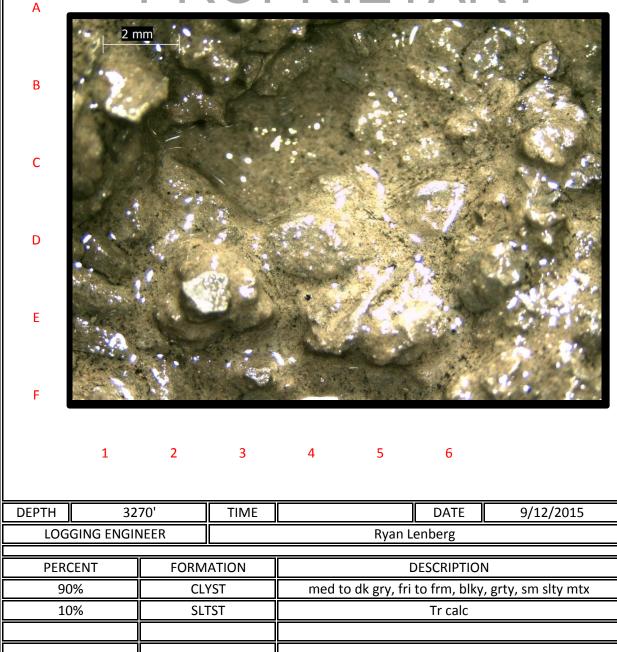
3240'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



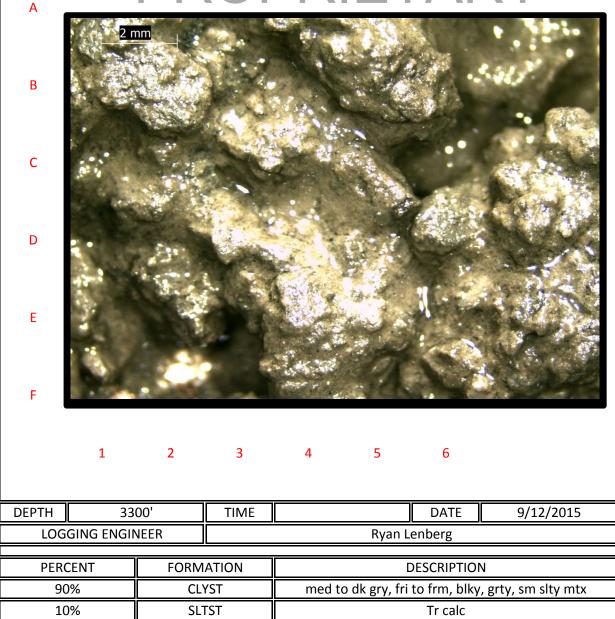
3270'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



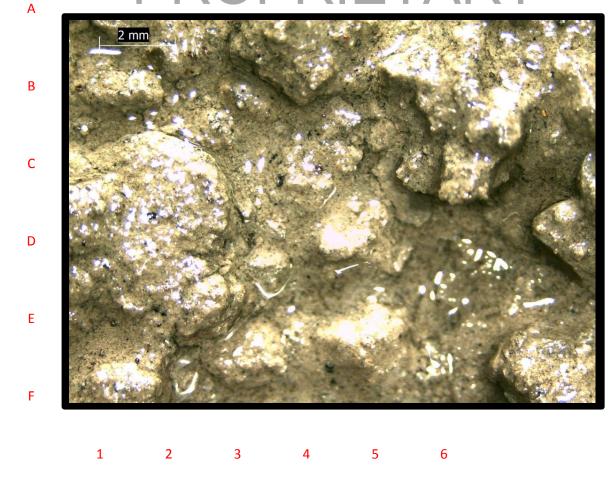
3300'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



3330'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



DEPTH	33	30'	TIME		DATE	9/12/2015	
LOGGING ENGINEER		Ryan Lenberg					
PERC	CENT	FORM	ATION DESCRIPTION			N	
80)%	CL	YST	med to dk gry, fri	to frm, blky	r, grty, sm slty mtx	
10	10% SLT		ГST		Tr calc		
10)%	S	S	No	o fluor, no c	ut.	

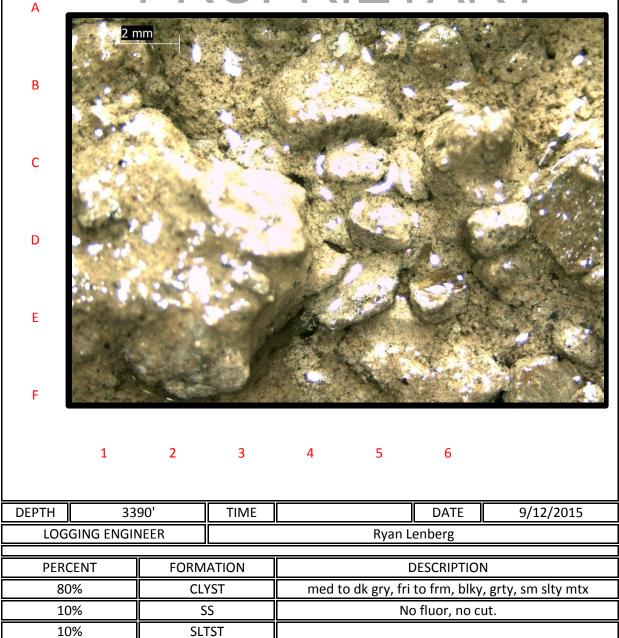
3360'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	33	60'	TIME			DATE	9/12/2015
	GING ENGI				Ryan Lo		
	CENT		IATION			ESCRIPTION	
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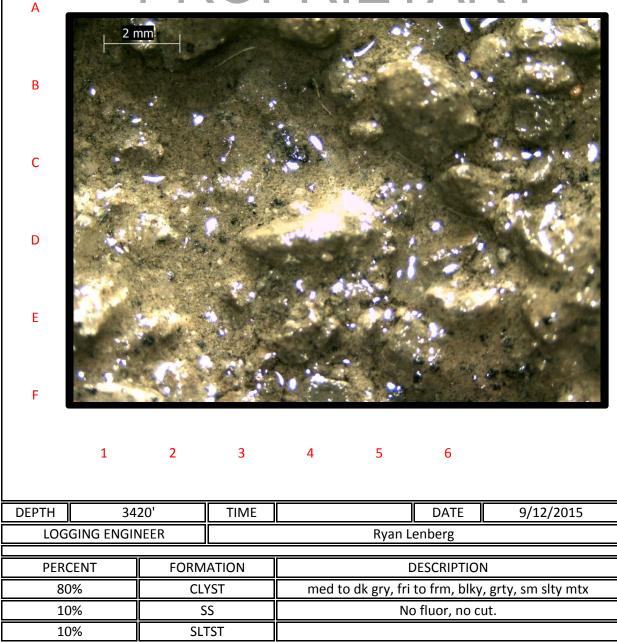
3390'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



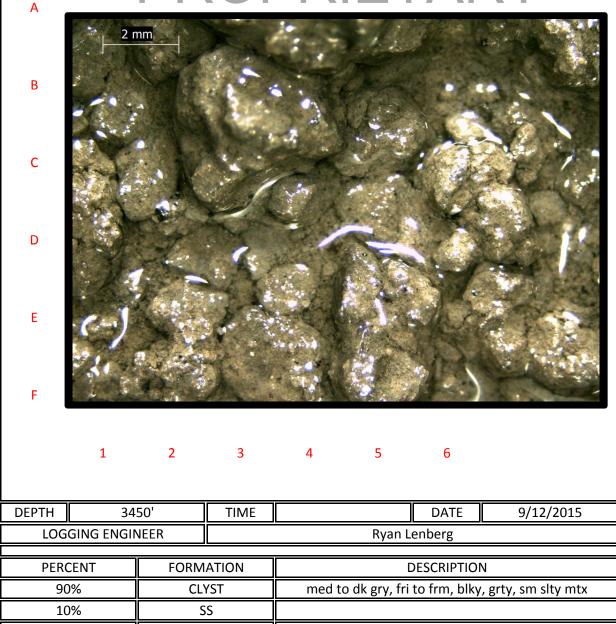
3420'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



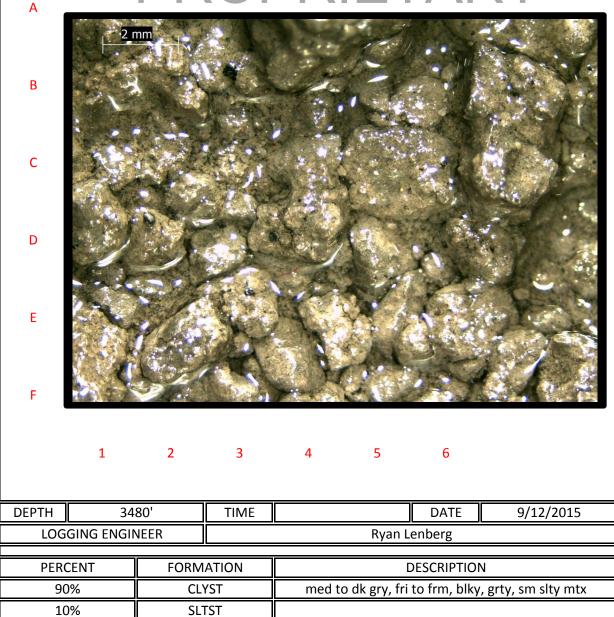
3450'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



3480'

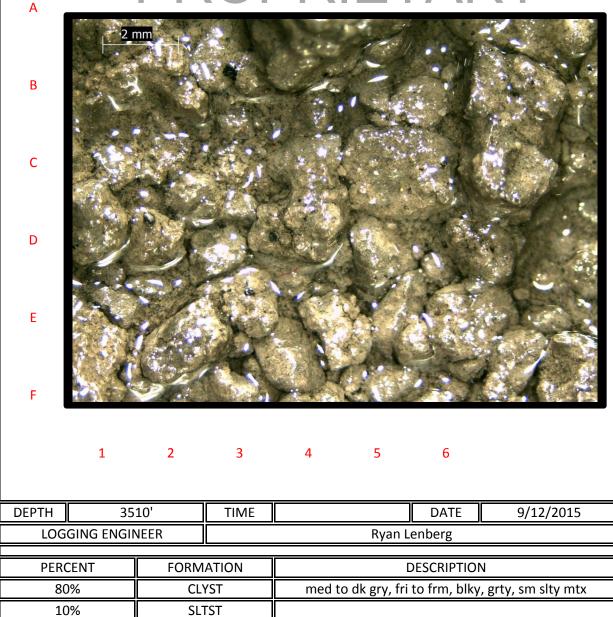
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



3510'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

PROPRIETARY



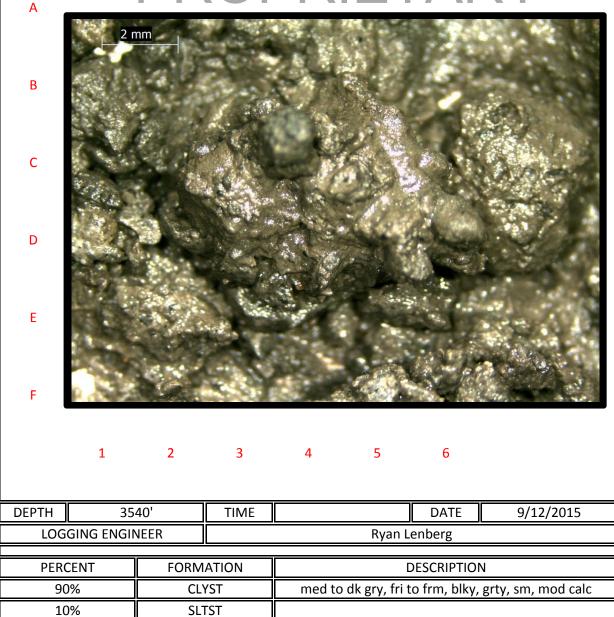
SS

10%

No fluor, no cut

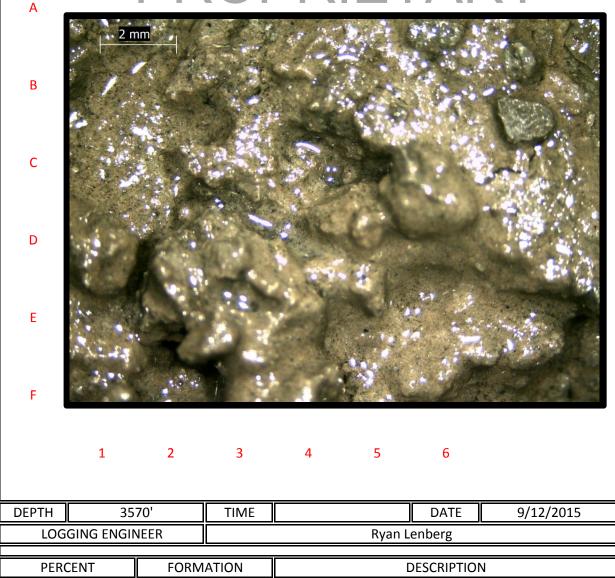
3540'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



3570'

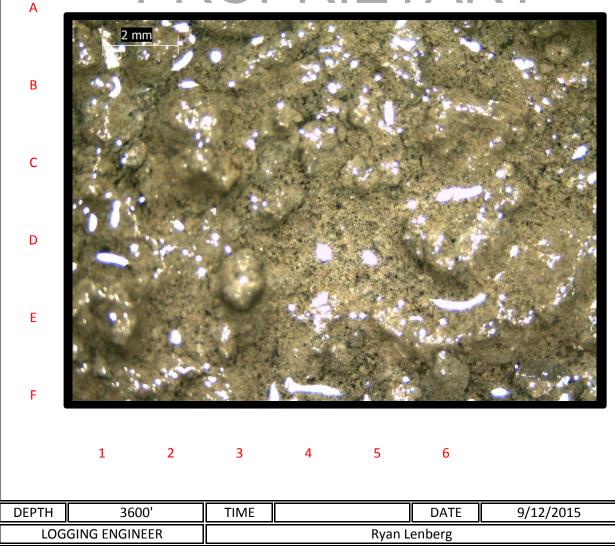
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



PERCENT	FORMATION	DESCRIPTION
90%	CLYST	med to dk gry, fri to frm, blky, grty, sm, mod calc
10%	SLTST	W/ tr ss, no fluor, no cut

3600'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



PERCENT	FORMATION	DESCRIPTION
80%	CLYST	med to dk gry, fri to frm, blky, grty, sm, mod calc
10%	SLTST	
10%	SS	No fluor, no cut

3630'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	#001 PROSPECT NAME Burger J	
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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	CENT	FORM	IATION			DESCRIPTION	
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	0%		TST				
10	0%	9	SS		N	o fluor, no c	ut

3660'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	36	60'	TIME			DATE	9/12/2015
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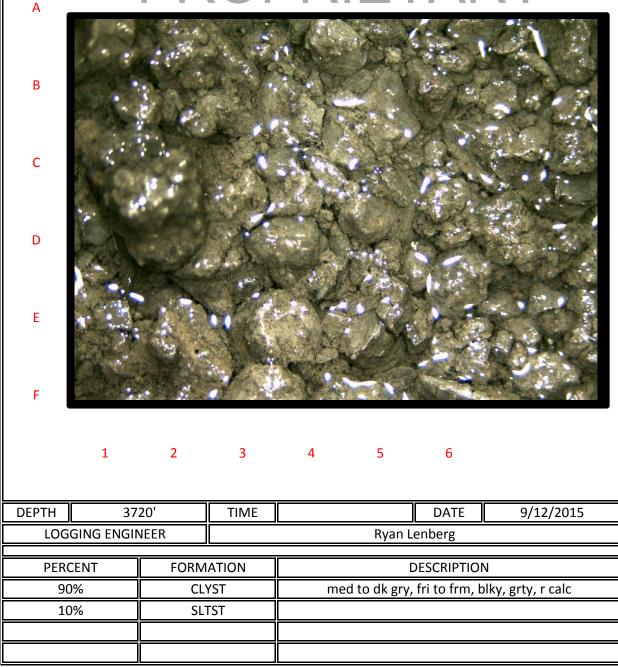
3690'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	36	90'	TIME			DATE	9/12/2015
	GING ENGI			L	Ryan l	_enberg	· · ·
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90		FORMATION CLYST		me			v Iky, grty, r calc
10		SLT				. , .	,

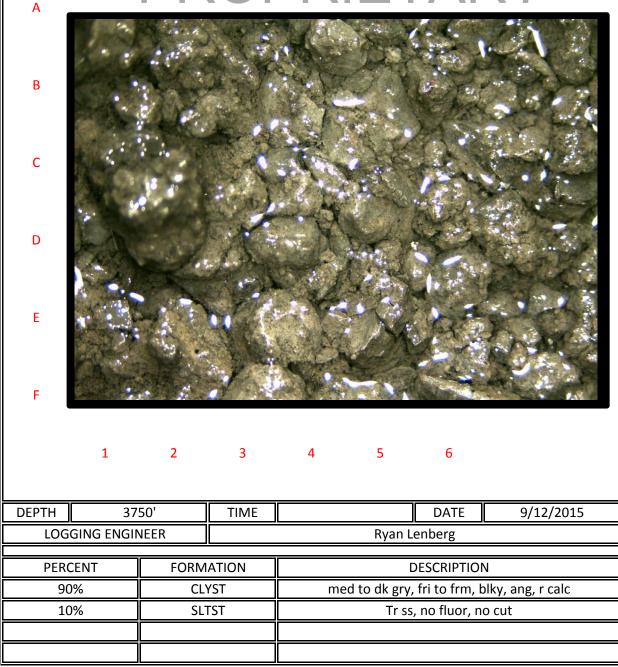
3720'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



3750'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



3780'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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	GGING ENGI				Rvan I	enberg	5/ 12/ 2015
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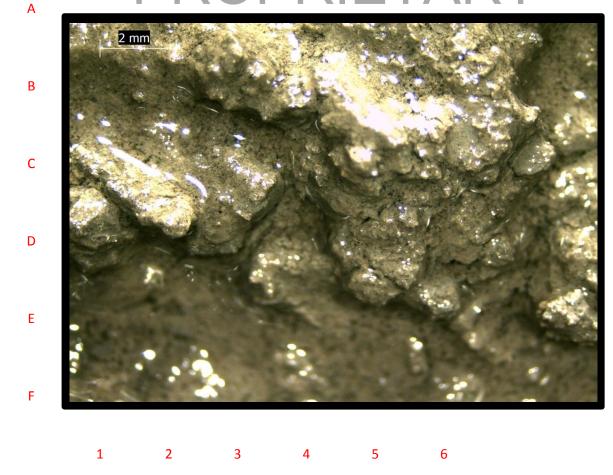
3810'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	38	10'	TIME			DATE	9/12/2015
LOG	GING ENGI	NEER			Ryan L	enberg	
DED	CENT	FORM	ATION			DESCRIPTIO	N
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3840'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



DEPTH	38	40'	TIME		DATE	9/12/2015		
LOG	LOGGING ENGINEER			Ryan Lenberg				
PERCENT FORMATION			DESCRIPTION					
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3870'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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3900'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	39	00'	TIME			DATE	9/12/2015
	OGGING ENGIN				Rvan	Lenberg	-, ,
PE	RCENT	FORM	IATION	DESCRIPTION			
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	10%	SL	TST				

3930'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	30	30'	TIME			DATE	9/12/2015
	GING ENGI			<u> </u>	Rvan I	enberg	5/ 12/ 2015
	PERCENT FORMATION			DESCRIPTION			
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L							

3960'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	39	60'	TIME			DATE	9/12/2015
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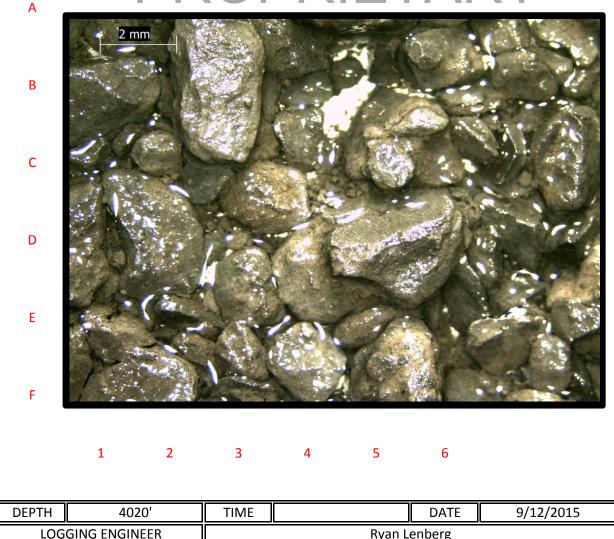
3990'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	39	90'	TIME			DATE	9/12/2015
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4020'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

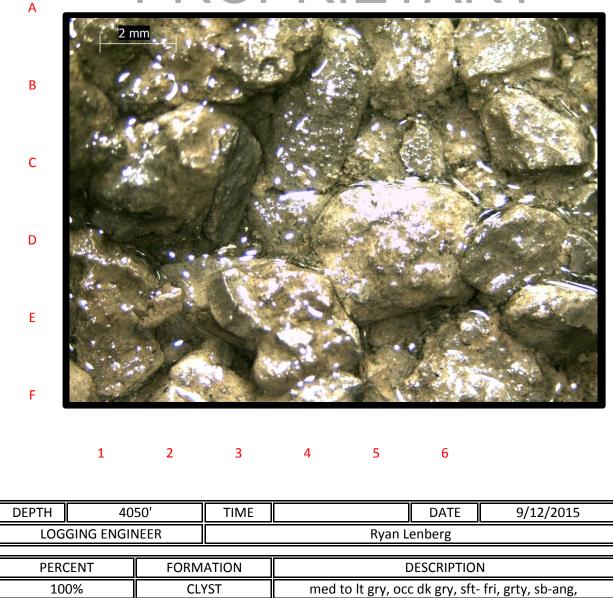


LOGGING ENGIN	NEER		Ryan Lenberg		
PERCENT	FORMATION		DESCRIPTION		
100%	CLYST		med to lt gry, fri, sm, sb-ang, rr sltst		

4050'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<u>PROPRIETARY</u>



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4080'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	40	80'	TIME			DATE	9/12/2015
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					000	c sltst, w dk l	ams

4110'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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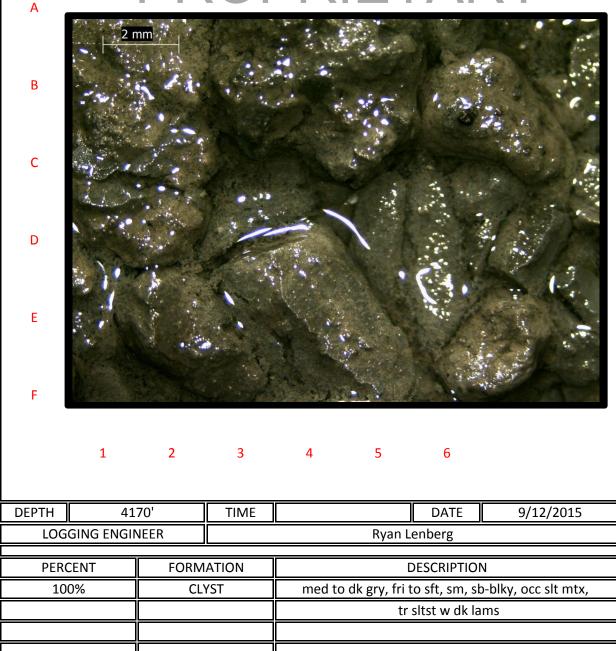
4140'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	41	40'	TIME			DATE	9/12/2015
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				sb-ang to sb-rnd, rr sltst			

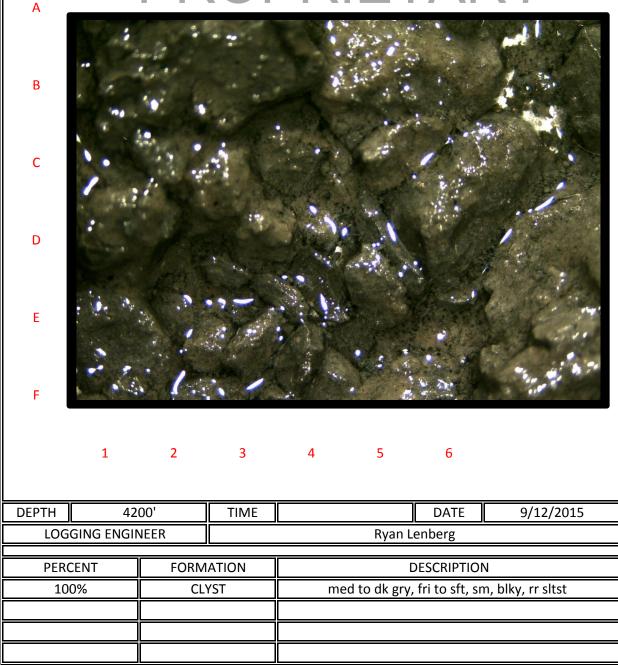
4170'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



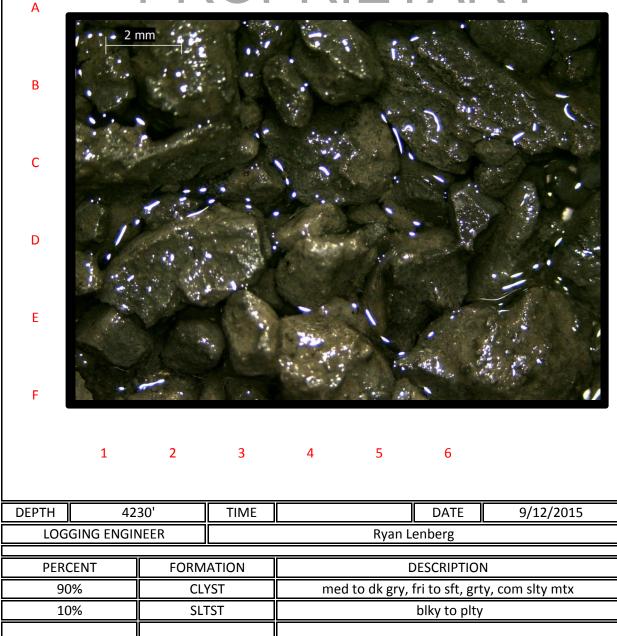
4200'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



4230'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



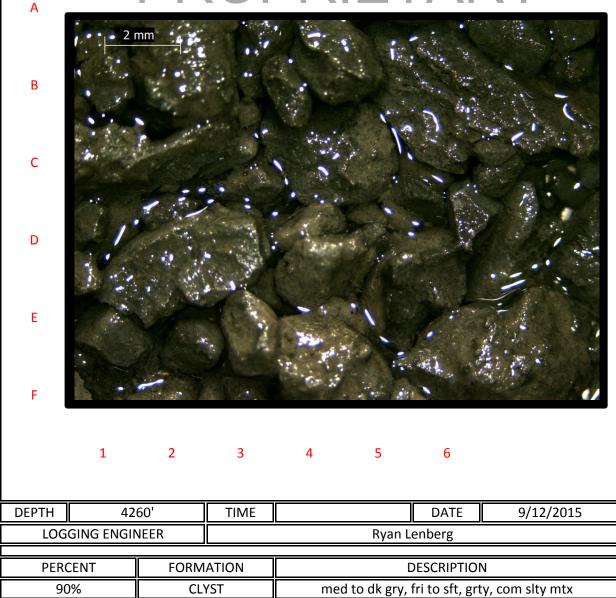
4260'

10%

SLTST

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

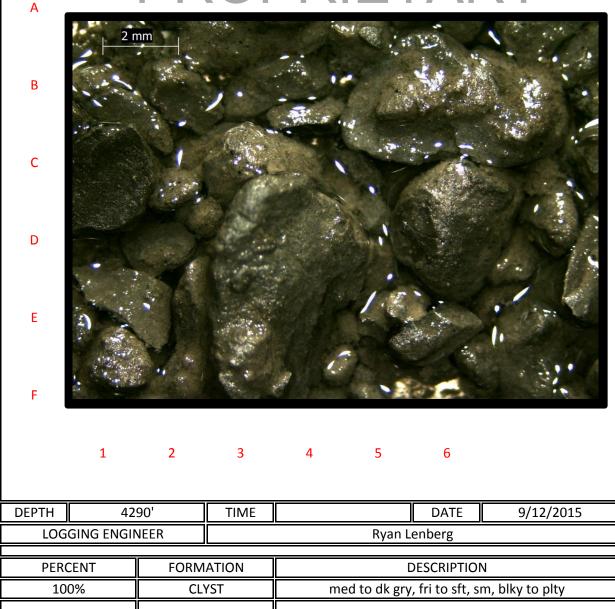
PROPRIETARY



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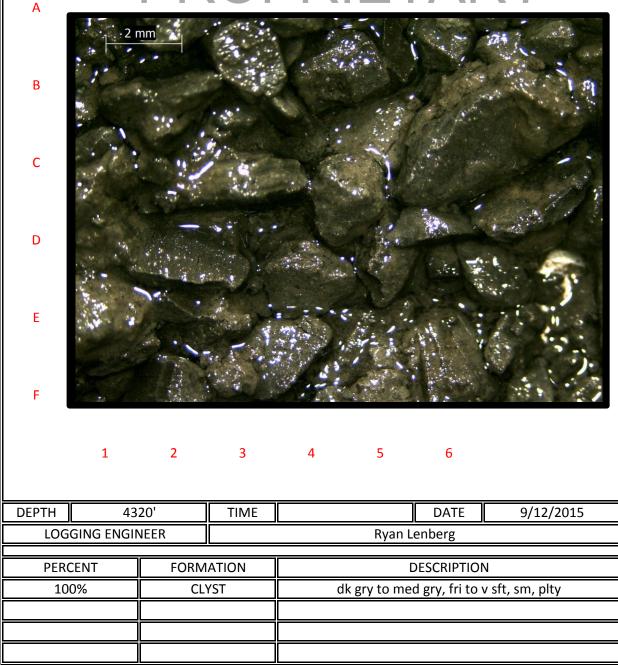
4290'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



4320'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



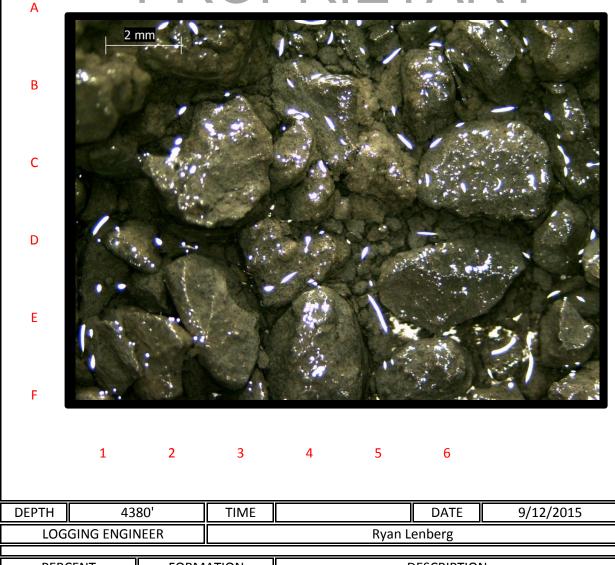
4350'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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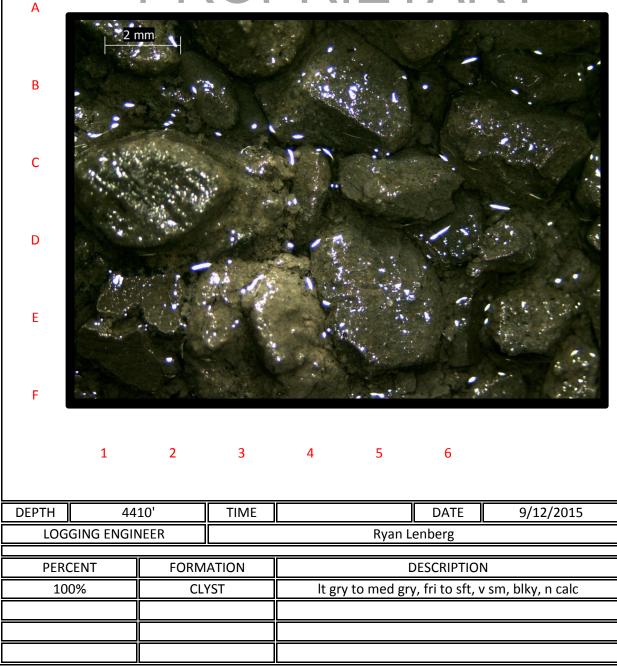
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



PERCENT	FORMATION	DESCRIPTION
100%	CLYST	dk gry to med gry, fri to v sft, sm, blky

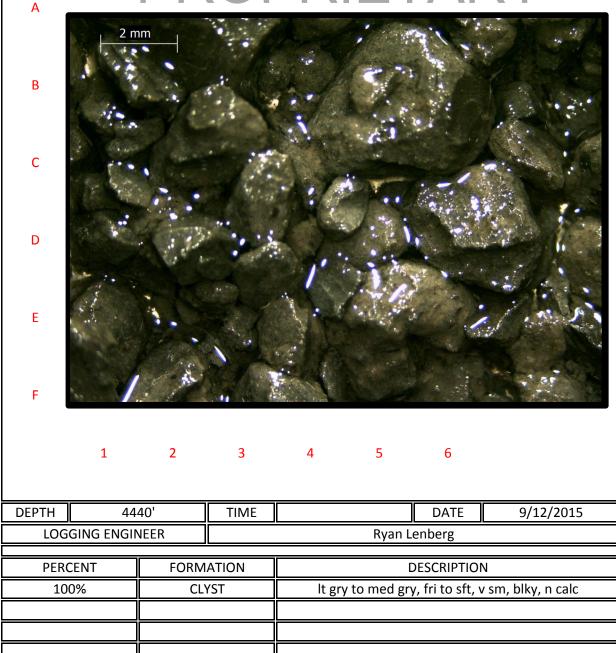
4410'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



4440'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



4470'

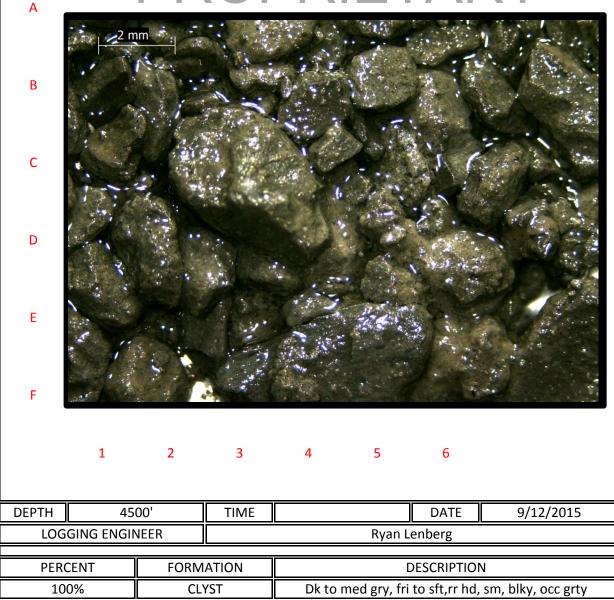
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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		- 01		r		<u> </u>	0/10/22:2
DEPTH	44		TIME			DATE	9/12/2015
LOG	GING ENGIN	IEEK			Ryan	Lenberg	
PERC	CENT	FORM	IATION			DESCRIPTION	
10	0%		YST	Dk to r	ned gry, fr	i to sft,rr hd, s	sm, blky, occ grty
					occ PD	C bit crlng, rr	tuf mtx

4500'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

<u>PROPRIETARY</u>



rr PDC bit crlng

4530'

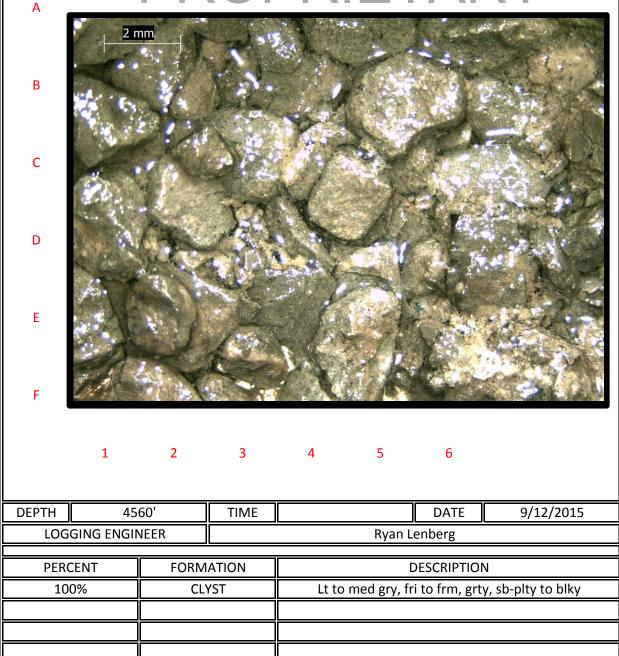
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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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	1	2	3	4	5	6	
DEPTH	45	30'	TIME			DATE	9/12/2015
LOC	GING ENGIN	NEER			Ryan L	enberg	
PFR	CENT	FORM	ATION		1	DESCRIPTION	
	PERCENTFORMATIONDESCRIPTION100%CLYSTLt to med gry, fri to sft, gr						
				occ PDC bit crlng, rr ss w/ calc cmt			

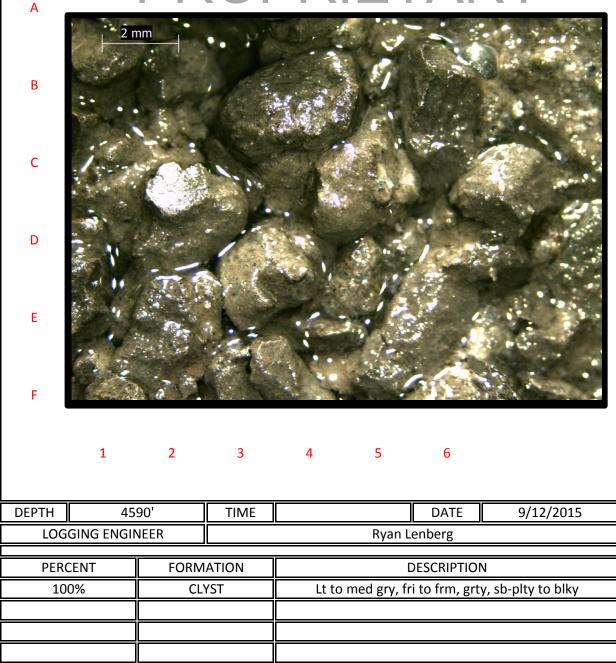
4560'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:	RSO NUMBER:		30230984



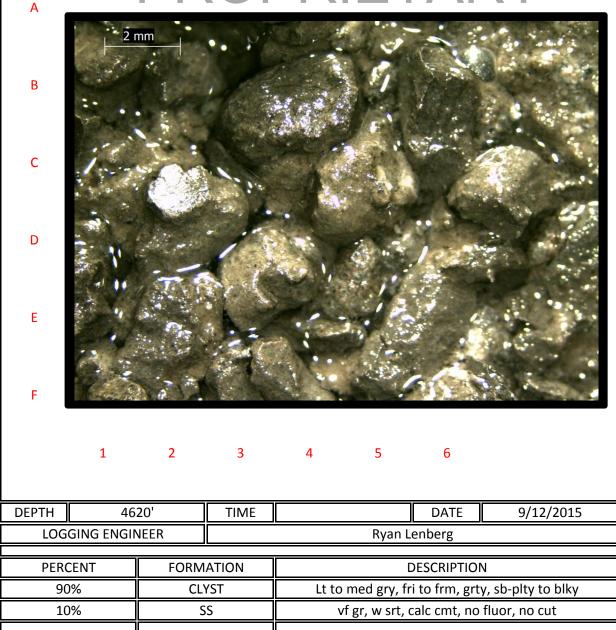
4590'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



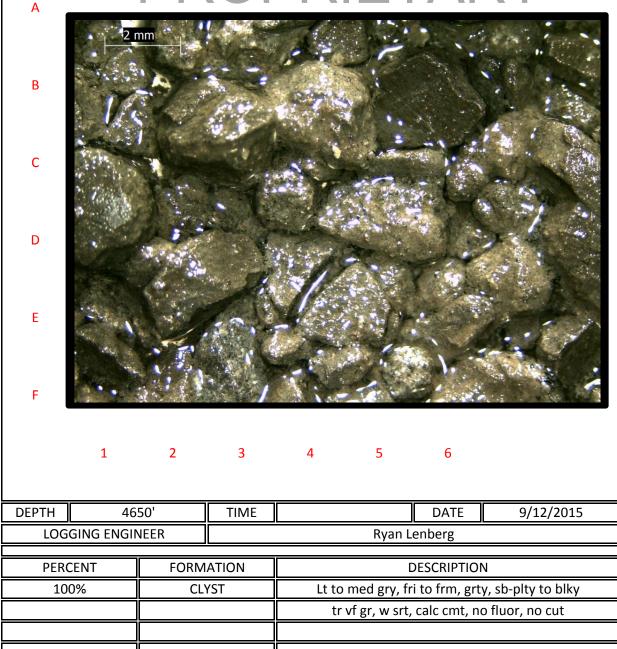
4620'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer	
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J	
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore	
STATE:	Alaska	API NUMBER:	55-352-00004-00	
RSO NUMBER:	RSO NUMBER:		30230984	



4650'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:	RSO NUMBER:		30230984



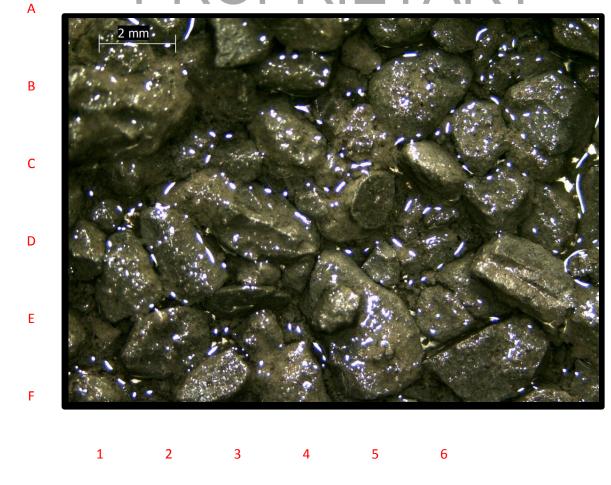
4680'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	46	80'	TIME			DATE	9/12/2015
	GING ENGIN			L	Ryan L	enberg	5/ 12/ 2015
	CENT		ATION YST	1++0		DESCRIPTION	v y, sb-plty to blky
	/0 /0		1.51				nt, no fluor, no cut
		i					

4710'

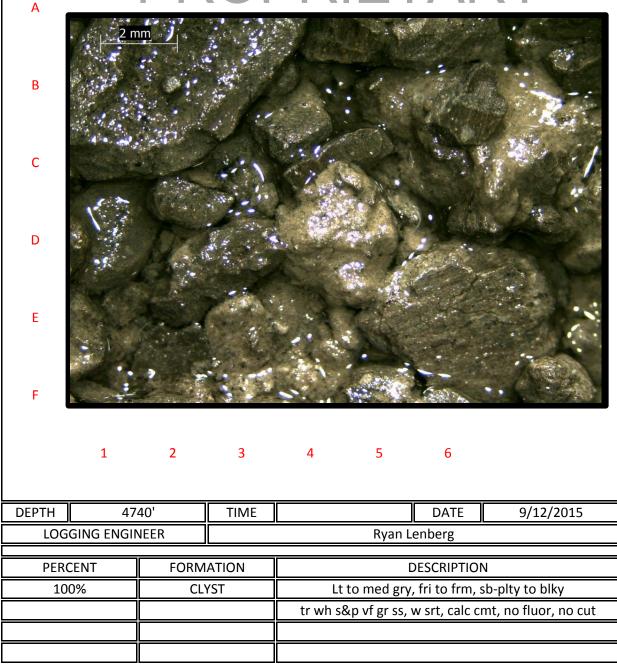
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



DEPTH	47	10'	TIME		DATE	9/12/2015	
LOGGING ENGINEER			Ryan Lenberg				
PERC	CENT	FORM	ATION	DESCRIPTION			
10	0%	CL	YST	Lt to med gry, fr	fri to frm, grty, sb-plty to blky		
				tr wh s&p vf gr ss, v	w srt, calc c	mt, no fluor, no cut	

4740'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



4770'

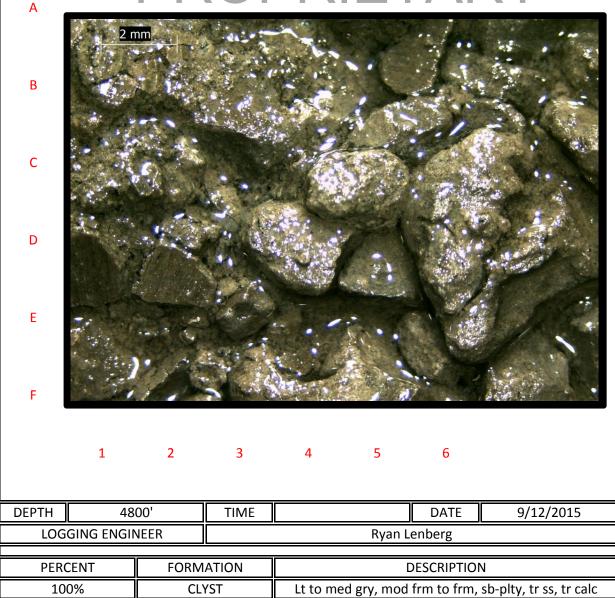
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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	47	70'	TIME			DATE	9/12/2015
	GGING ENGIN				Ryan L	enberg	
DE	RCENT	FORM	ATION			DESCRIPTION	
	100%		YST	+-			
<u> </u>				Lt to med gry, fri to frm, sb-plty to blky tr wh s&p vf gr ss, w srt, calc cmt, no fluor, no cut			
					,	· · · ·	

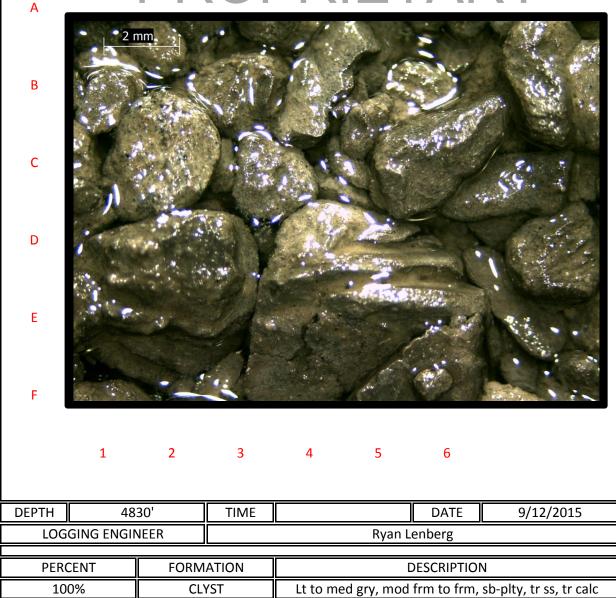
4800'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



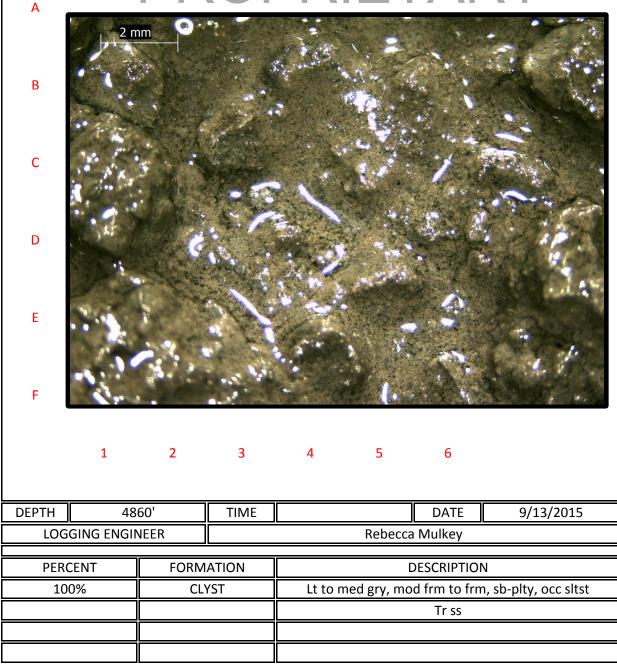
4830'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



4860'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



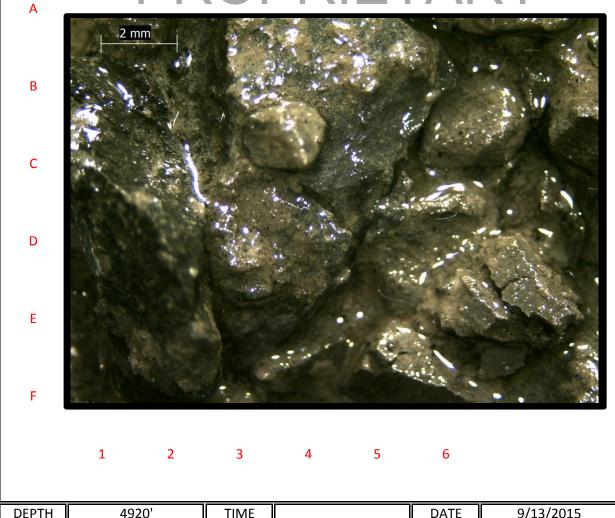
4890'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	48	90'	TIME			DATE	9/13/2015
LOG	GING ENGIN	NEER		<u> </u>	Rebecca	a Mulkey	
	PERCENT FORMATION 100% CLYST			1++		DESCRIPTION	
10	0%		YST	Lt to med gry, mod frm to frm, sb-plty, occ sltst			
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4920'

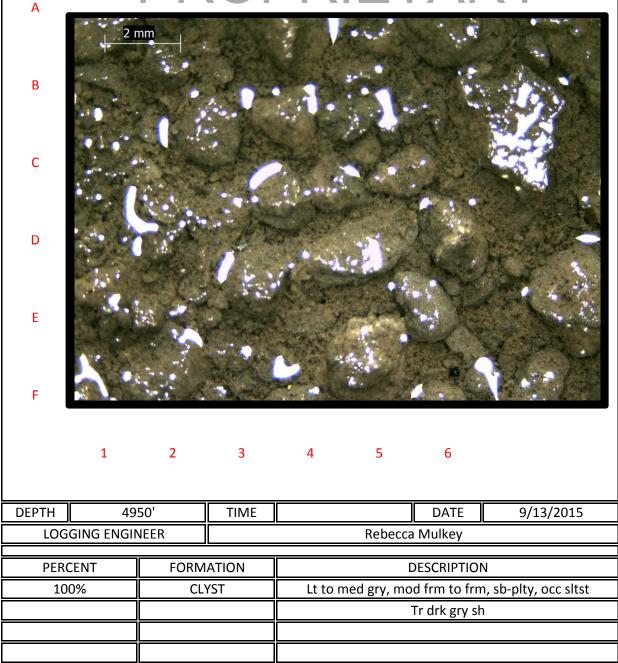
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



DEPTH	49	20'	TIME			DATE	9/13/2015	
LOG	GING ENGI	NEER	Rebecca Mulkey					
				7				
PERO	CENT	FORM	ATION DESCRIPTION			N		
10	0%	CL	/ST	Lt to med	Lt to med gry, mod frm to frm, sb-plty, occ sltst			
					-	Tr drk gry sł)	

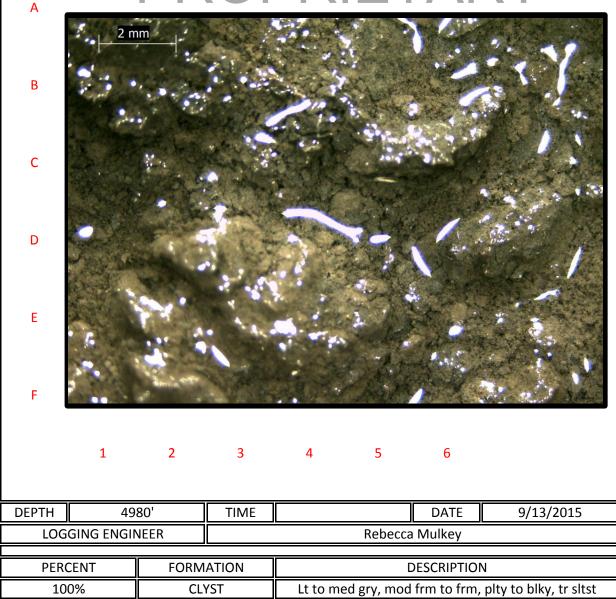
4950'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



4980'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



5010'

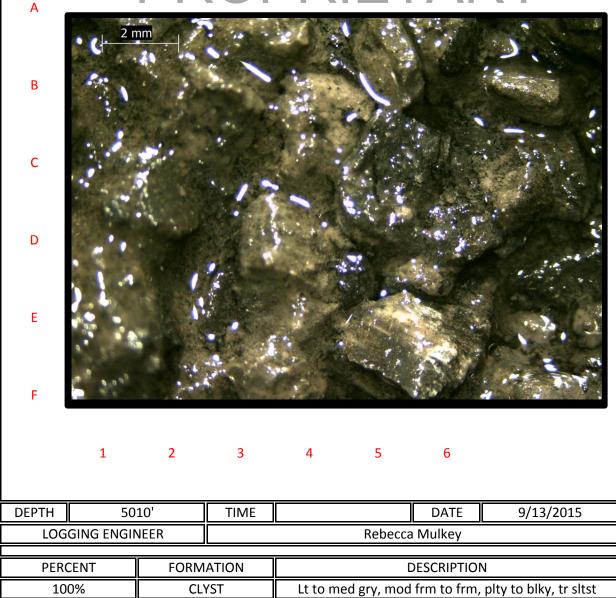
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COMPANY:	Shell E&P	
WELL NAME:	OCS-Y-2321 #001	PR
LOCATION:	Chukchi Sea	COU

STATE:

RSO NUMBER:

•	Shell E&P	RIG NAME:	Polar Pioneer
•	OCS-Y-2321 #001	PROSPECT NAME	Burger J
•	Chukchi Sea	COUNTY / PARISH:	Offshore
•	Alaska	API NUMBER:	55-352-00004-00
•		WBS / AFE NUMBER:	30230984

<u>PROPRIETARY</u>



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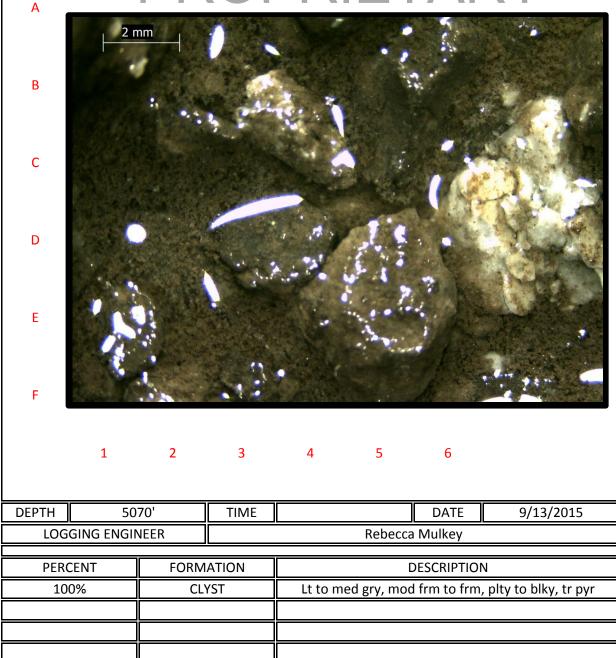
5040'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	50	40'	3 TIME	4		DATE	9/13/2015
LO	GGING ENGI	40' NEER	TIME	4	Rebecc	DATE a Mulkey	
LO PE	GGING ENGING ENG	40' NEER FORM	TIME		Rebecc	DATE a Mulkey DESCRIPTION	N
LO PE	GGING ENGI	40' NEER FORM	TIME		Rebecc	DATE a Mulkey DESCRIPTION	
LO PE	GGING ENGING ENG	40' NEER FORM	TIME		Rebecc	DATE a Mulkey DESCRIPTION	N
LO PE	GGING ENGING ENG	40' NEER FORM	TIME		Rebecc	DATE a Mulkey DESCRIPTION	N

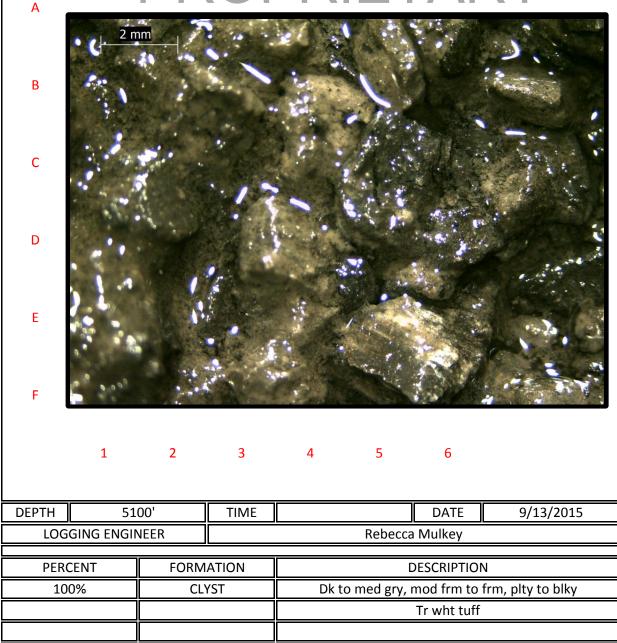
5070'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



5100'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



5130'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	51	30'	TIME			DATE	9/13/2015
LOG	GING ENGIN	IEER			Rebecc	a Mulkey	
PFR	CENT	FORM	ATION			DESCRIPTION	1
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5160'

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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	51	60'	TIME		DATE 9/13/201		
LOG	GING ENGIN	ENGINEER Rebecca Mulkey					
PERC	ENT FORM		AATION DESCRIPTION			N	
10	0%	CL	/ST	ST med to drk gry, mod frm to frm, plty		frm, plty to blky	

5190'

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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

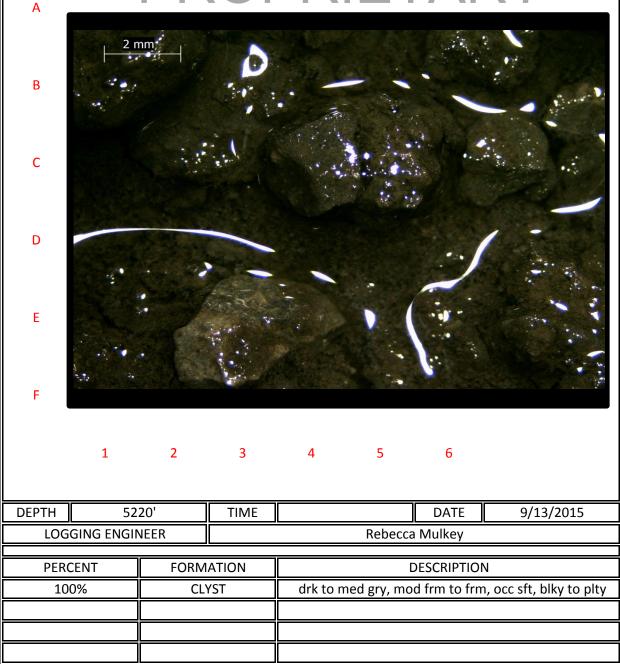
F

1 2 3 4 5 6

DEPTH	51	90'	TIME		DATE	9/13/2015
LOGGING ENGINEER		Rebecca Mulkey				
PERG	CENT	FORMATION		DESCRIPTION		
10	0%	CLYST		drk to med gry, mod frm to frm, occ sft, blky to plt		n, occ sft, blky to plty

5220'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



5250'

10%

SLTST

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer	
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J	
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore	
STATE:	Alaska	API NUMBER:	55-352-00004-00	
RSO NUMBER:		WBS / AFE NUMBER:	30230984	

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DEPTH			TIME	<u> </u>		DATE	9/13/2015
LOG	LOGGING ENGINEER		<u> </u>		Rebecca	Mulkey	
PER	CENT	FORM	ATION		D	ESCRIPTION	1
90	0%	CLY	/ST	drk to n	ned gry, mod	d frm to frm	a, occ sft, blky to plty

It to med gry, v fn, wl srt, v sft to sft.

5280'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	52	80' TIME			DATE	9/13/2015
LOG	GING ENGI	NGINEER		Rebecca Mulkey		
PERO	CENT	FORMATION		DESCRIPTION		
90)%	CLYST		drk to med gry, mod frm to frm, occ sft, blky to plt		n, occ sft, blky to plty
10)%	SLTST		It to med gry, v fn, wl srt, v sft to sf		t, v sft to sft.

5310'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	53	10'	TIME		DATE	9/13/2015
LOGGING ENGINEER		Rebecca Mulkey				
PERC	CENT	FORMATION		DESCRIPTION		
80)%	CLYST		drk to med gry, mo	drk to med gry, mod frm to frm, occ sft, blky to plt	
20)%	SLTST		It to med gry	/, v fn, wl sr	t, v sft to sft.

5340'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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LOGGING ENGI	NEER	Rebecca Mulkey
PERCENT	FORMATION	DESCRIPTION
90%	CLYST	drk to med gry, mod frm to frm, blky to plty, tr calc,
10%	SLTST	It to med gry, v fn, wl srt, v sft to sft.

5370'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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R				
PERCENT	FORMATION	DESCRIPTION		
80%	CLYST	drk to med gry, mod frm to frm, blky to plty, tr calc,		
20%	SLTST	It to med gry, v fn, wl srt, v sft to sft.		

5400'

F

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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1 2 3 4 5 6

DEPTH	54	00'	TIME		DATE	9/13/2015	
LOGGING ENGINEER		Rebecca Mulkey					
		ù					
PERC	CENT	FORM	ATION DESCRIPTION			N	
90)%	CL	/ST	drk to med gry, mod frm to frm, blky to plty,			
10)%	SL	rst	It to med gry, v fn, wl srt, v sft to sft.		t, v sft to sft.	

5423'

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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	54	23'	TIME			DATE	9/13/2015
	GING ENGI			I	Rebecca		5, 15, 2015
	CENT		ATION				
9	0%	CL	/ST	T drk to med gry, mod frm to frm, blky to plty,			
	0%	SL ⁻	IST	lt	to med gry	/, v fn, wl srt,	v sft to sft.

HALLIBURTON

Sperry Drilling



Shell Offshore Inc. OCS Y-2321 #001 Burger J Posey Block 6912 API No. 55-352-00004-00

RIG: Polar Pioneer

SDL Personnel:

Craig Amos– Unit Manager Rebecca Mulkey, Eli Callan– Logging Specialists

5460'

20%

10%

SH

CMT

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

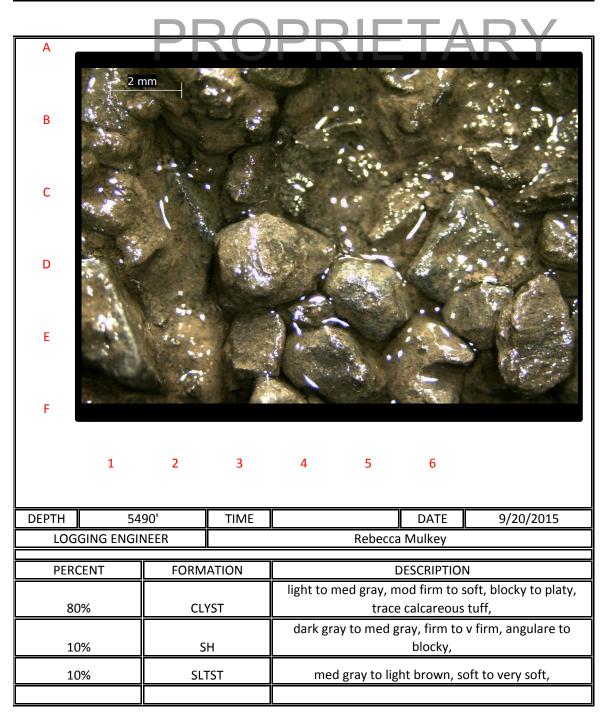
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dark gray to med gray, firm to v firm, angular to blocky, occasional brittle, trace siltstone

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DEPTH	54	60'	TIME			DATE	9/20/2015
LOG	GING ENGI	NEER			Rebecca	Mulkey	
PER	CENT	FORM	ATION		D	ESCRIPTION	
)%		/ST	light to r			t, blocky to platy,

5490'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



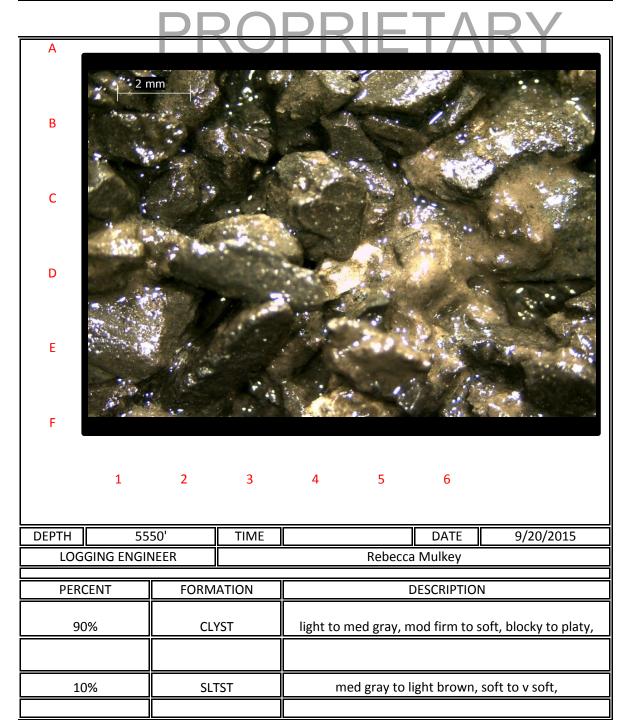
5520'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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C			Contraction of the second s
D			
E			
F		i si	
1	2	3	4 5 6
	20'	TIME	DATE 9/20/2015
LOGGING ENGI	NEER		Rebecca Mulkey
PERCENT	FORM	ATION	DESCRIPTION
80%	CLYST		light to med gray, mod firm to soft, blocky to platy, trace pyrite,
10%	SH		dark gray to med gray, firm to v firm, angular to blocky,
10%	SL	IST	med gray to light brown, soft to very soft,

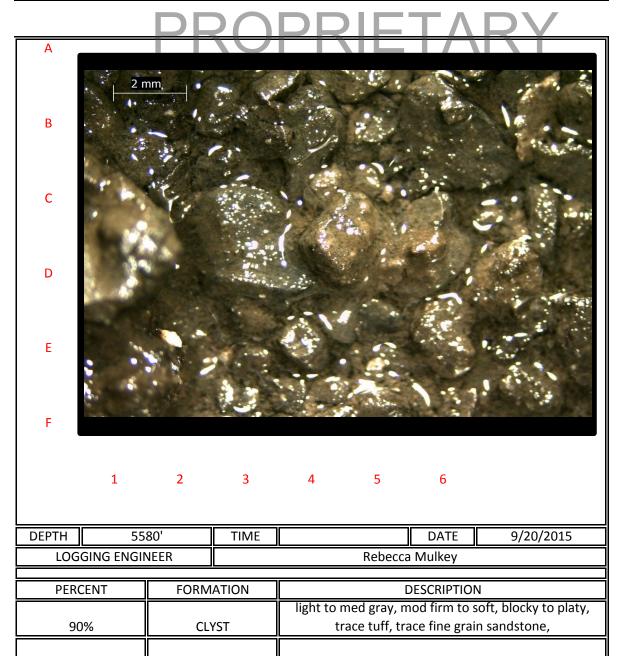
5550'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



5580'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



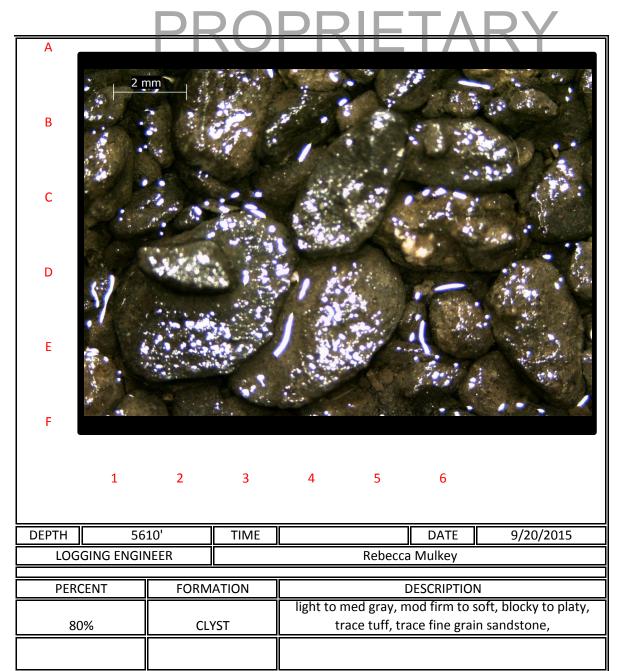
med gray to light brown, soft to v soft,

10%

SLTST

5610'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



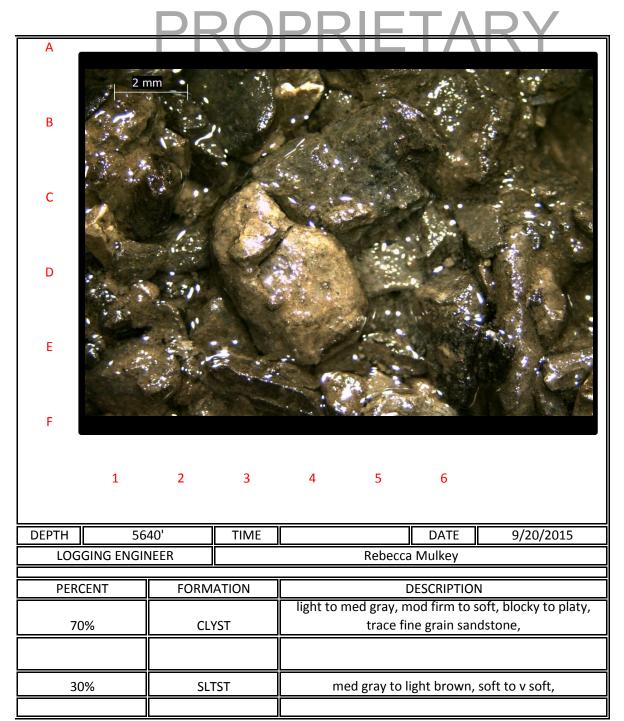
med gray to light brown, soft to v soft,

20%

SLTST

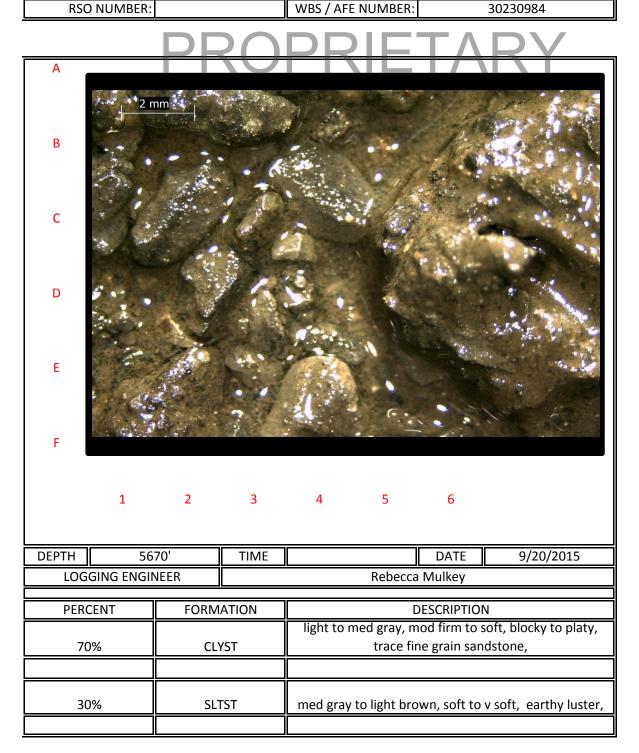
5640'

COMPANY:	Shell E&P	RIG NAME:	Delar Dienser
COMPANY.	Shell EQP	RIG NAME.	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



5670'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
SO NI IMBER		W/BS / AFE NUMBER:	3023098/



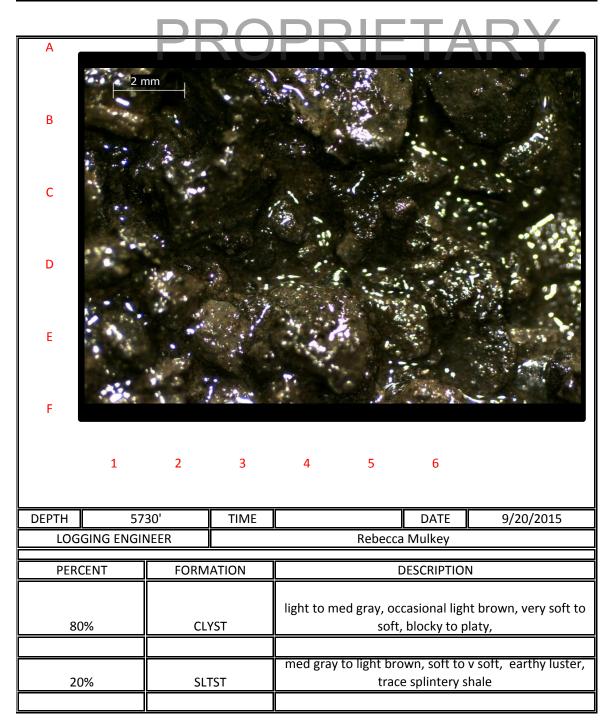
5700'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

Α 2 mm В С D Ε F 1 2 3 4 5 6 9/20/2015 DEPTH 5700' TIME DATE LOGGING ENGINEER Rebecca Mulkey DESCRIPTION PERCENT FORMATION light to med gray, occasional light brown, very soft to soft, blocky to platy, 70% CLYST med gray to light brown, soft to v soft, earthy luster, trace splintery shale 30% SLTST

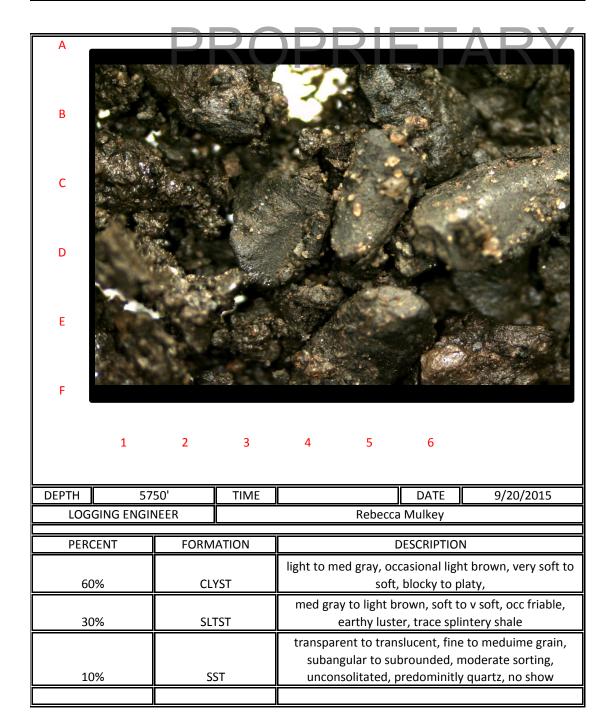
5730'

		P	
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984





COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



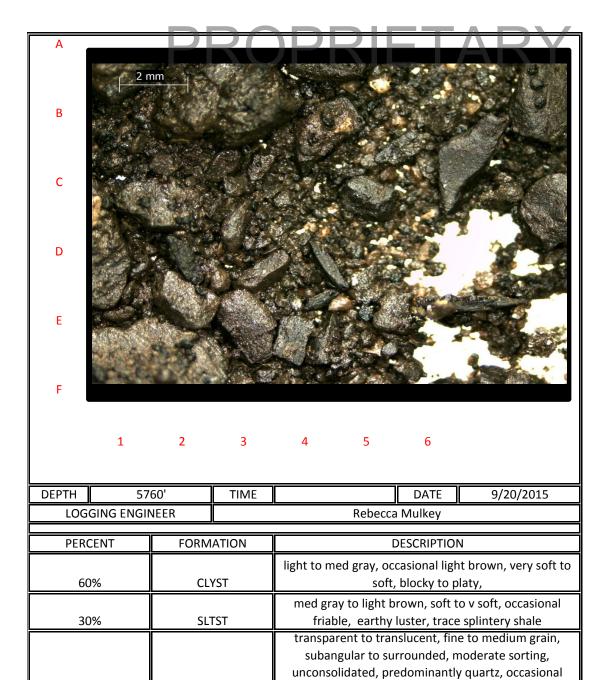


10%

SST

5760'

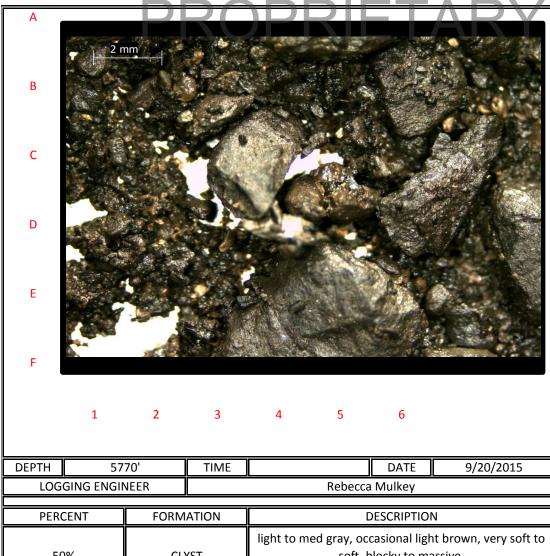
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



glauconite, no show



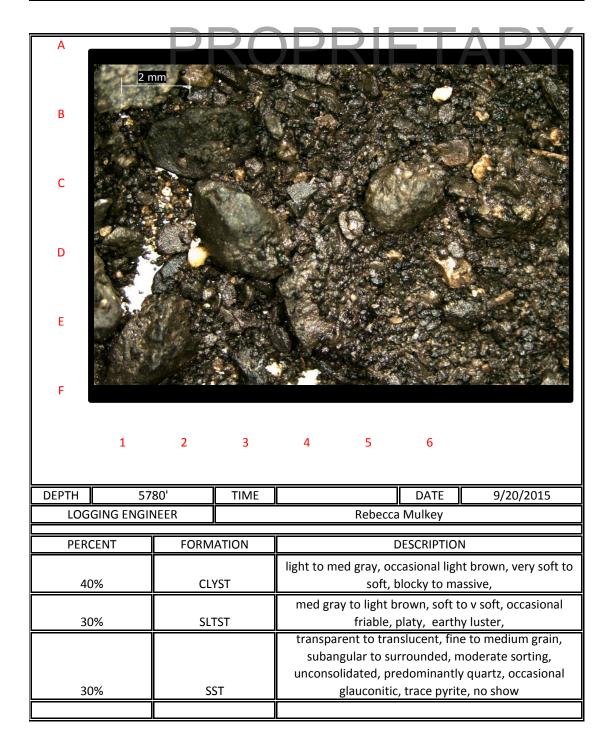
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



		light to med gray, occasional light brown, very soft to	
50%	CLYST	soft, blocky to massive,	
		med gray to light brown, soft to v soft, occasional	
30%	SLTST	friable, earthy luster, trace splintery shale	
		transparent to translucent, fine to medium grain,	
		subangular to surrounded, moderate sorting,	
		unconsolidated, predominantly quartz, occasional	
20%	SST	glauconitic, trace pyrite, no show	

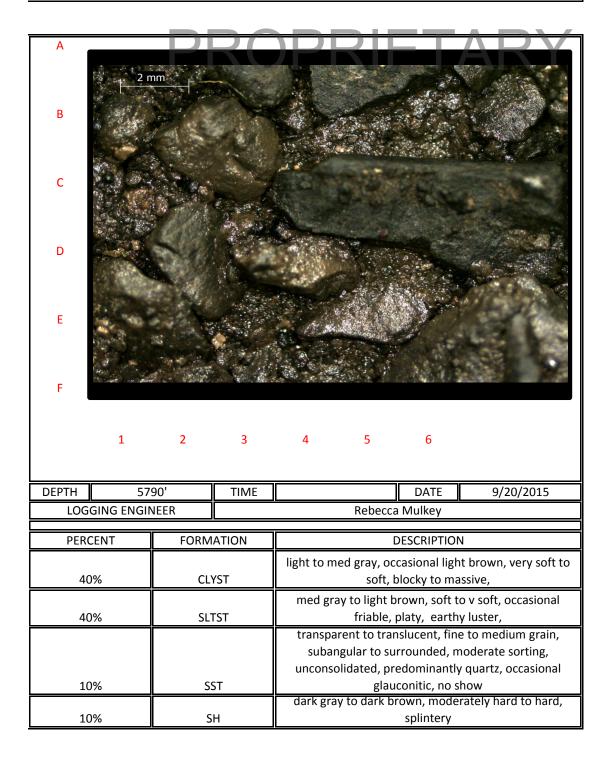


COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



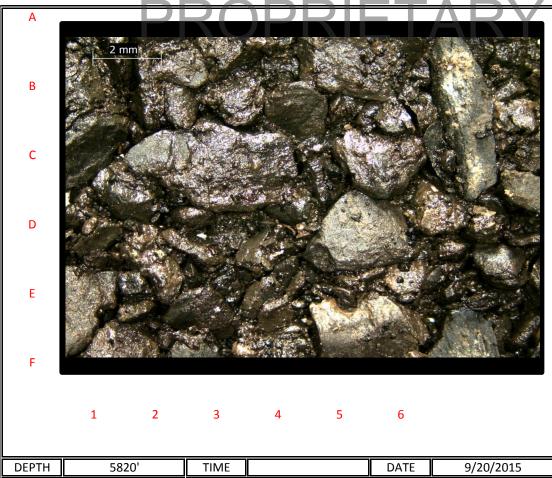


COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984





COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

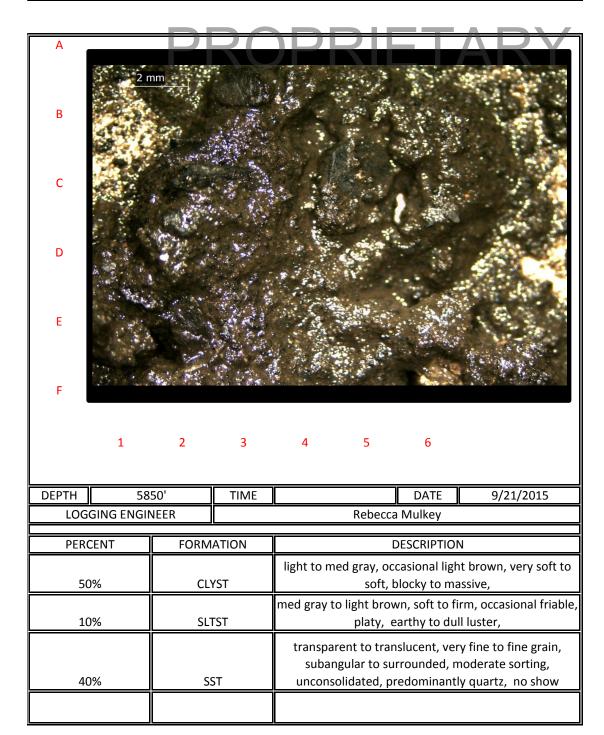


DEPTH	58	20'	TIME		DATE	9/20/2015
LOGO	LOGGING ENGINEER			Rebecca Mulkey		
PERC	ENT	FORM	ATION	C	DESCRIPTION	
60	%	CLYST		• • •	occasional light brown, very soft t, blocky to massive,	
20	%	SLTST		med gray to light b occasional friable	-	o v soft, trace frim, thy to dull luster,
10	%	SST		transparent to tran subangular to su unconsolidated, pr	rrounded, n	noderate sorting,
10	%	SH		dark gray to dark br	own, mode splintery	rately hard to hard,



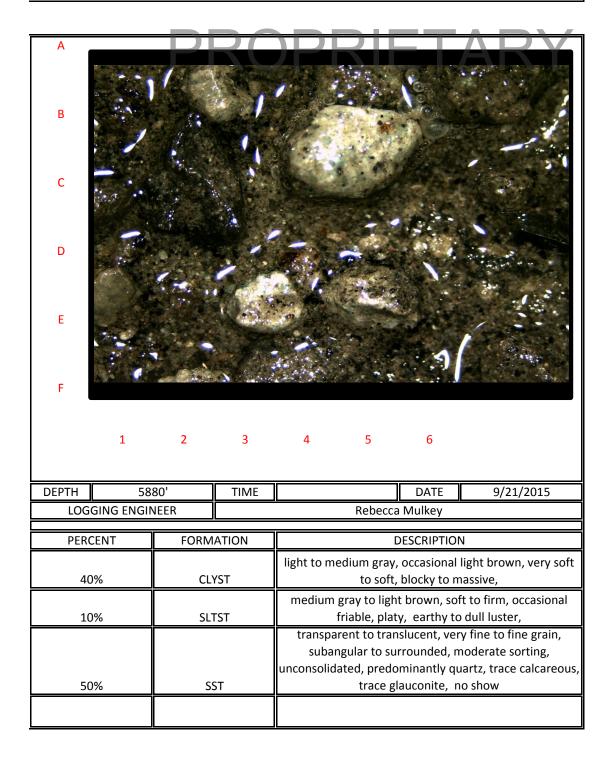
5850'	
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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



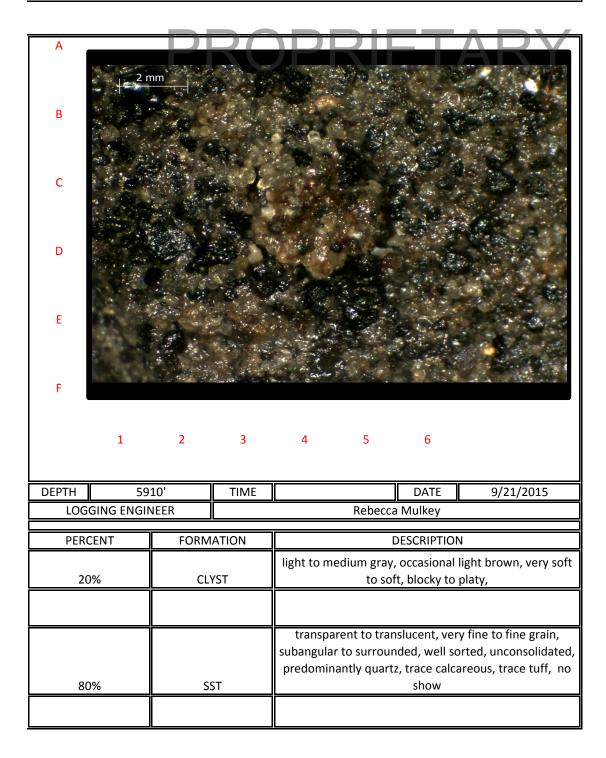


COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



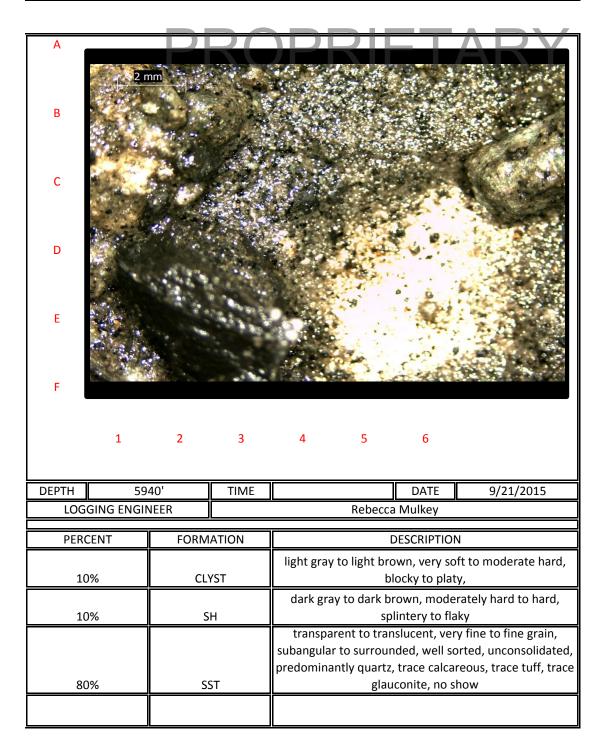


COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

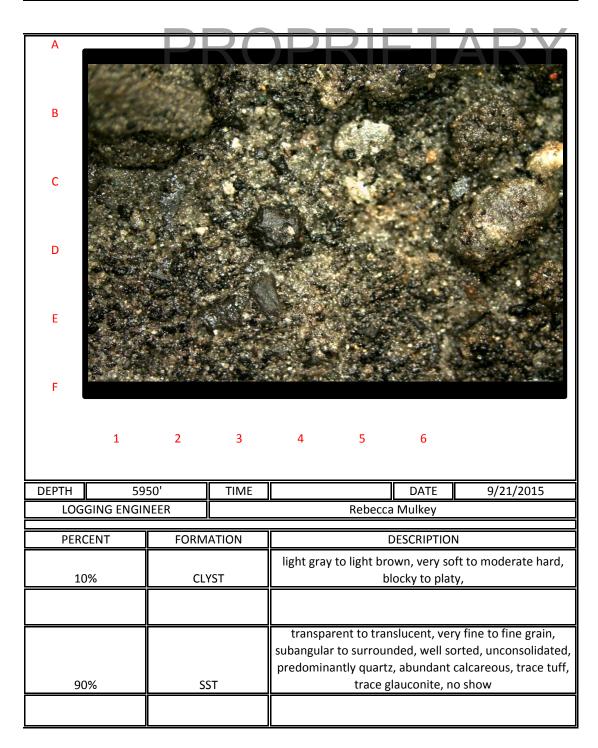




COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

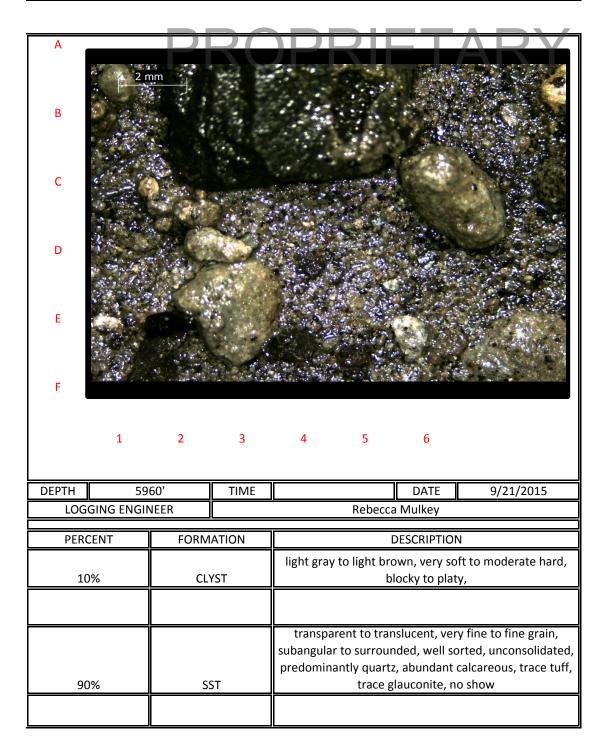


COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
COMPANY.	SHEILEQF	RIG NAIVIE.	Folal Flolleel
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



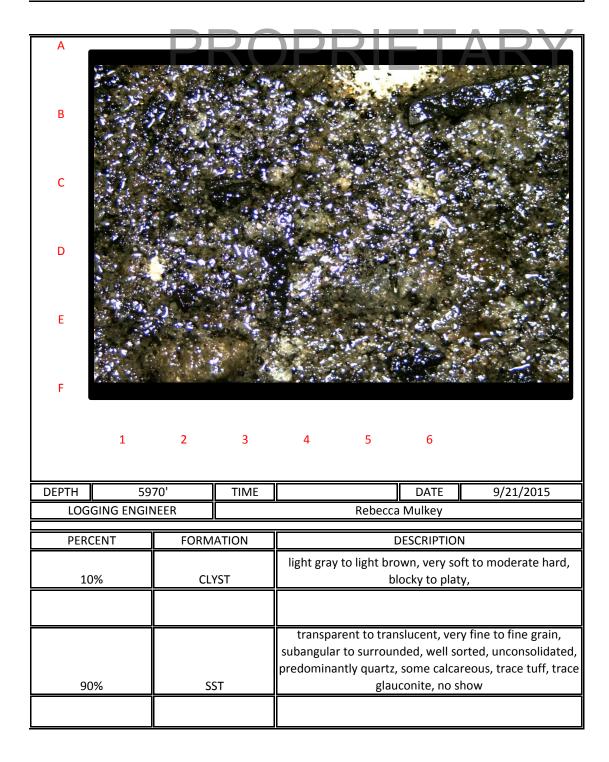


COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984





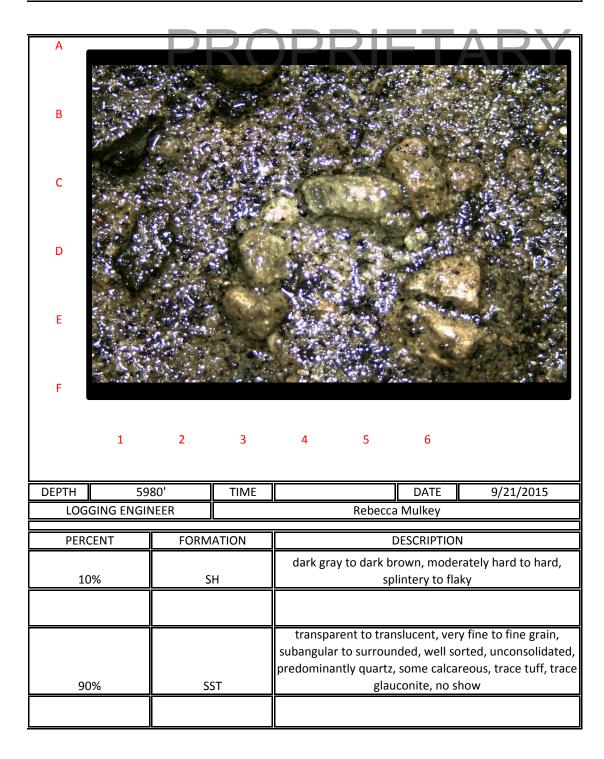
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984





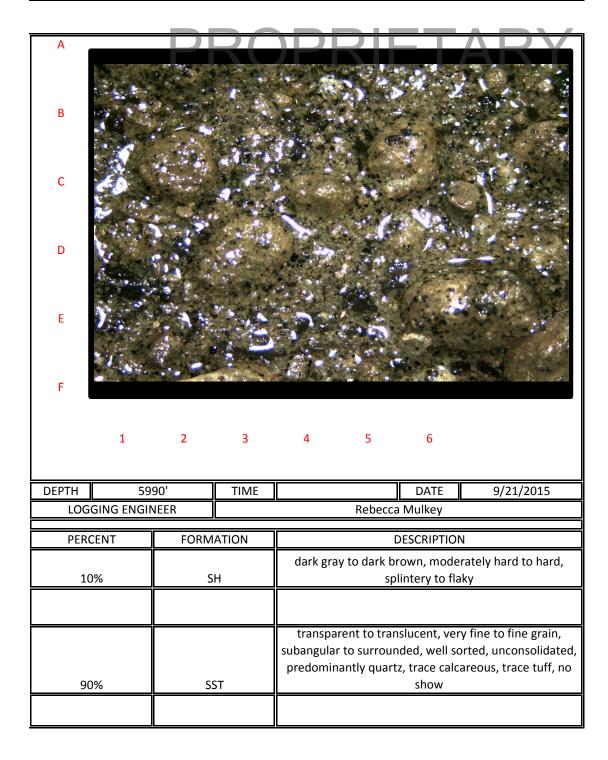
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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984





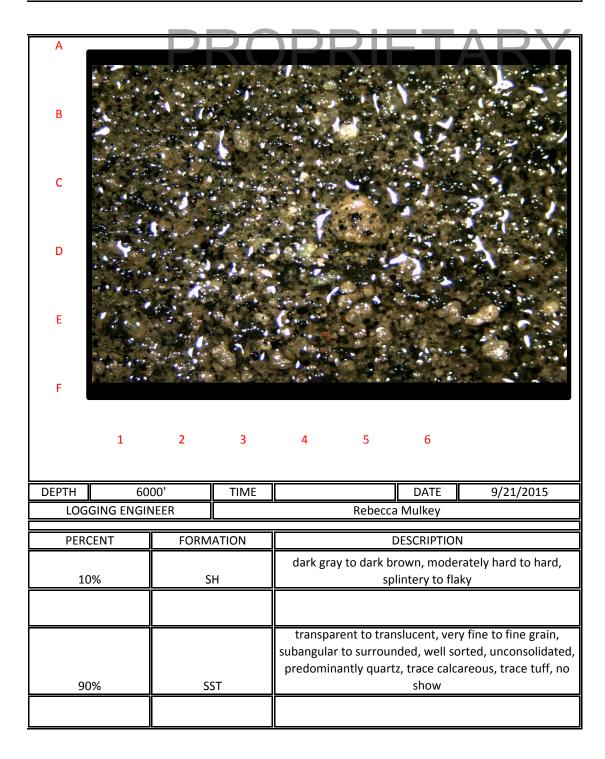
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984





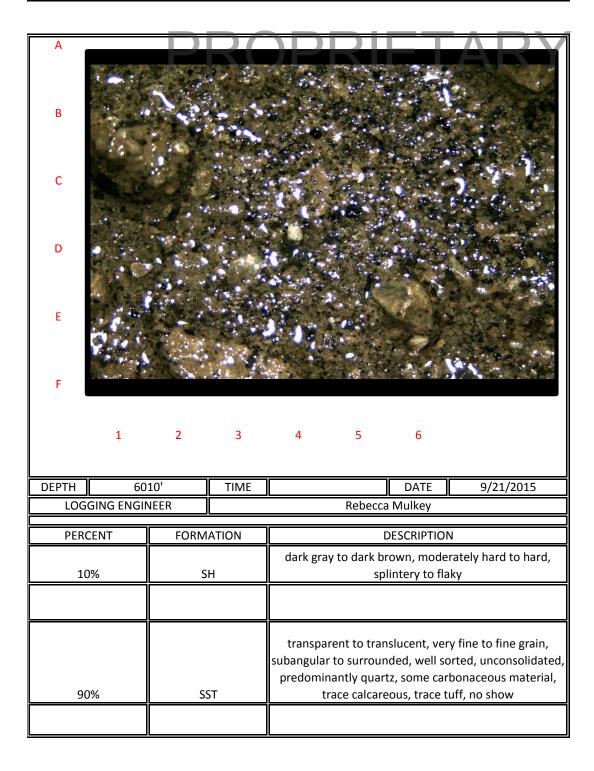
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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



DEPTH	
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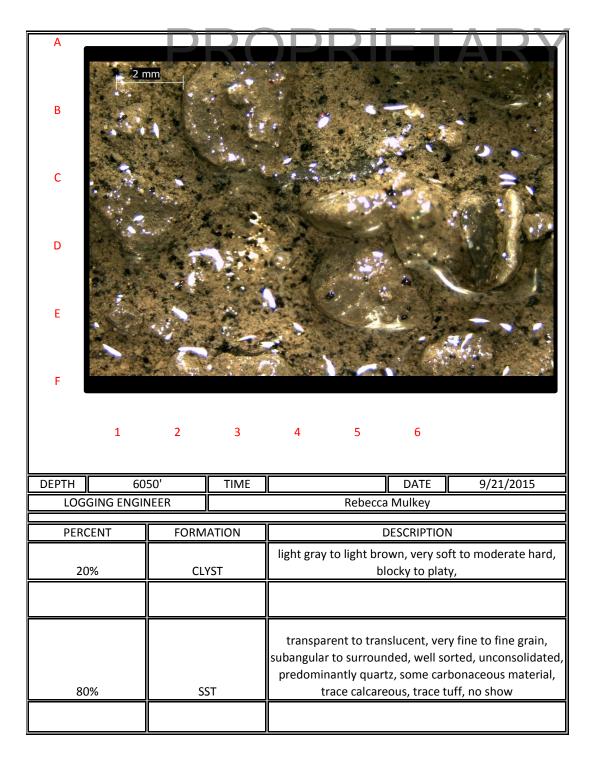
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



		6050'	
COMPANY:	Shell E&P	RIG NAME:	
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	

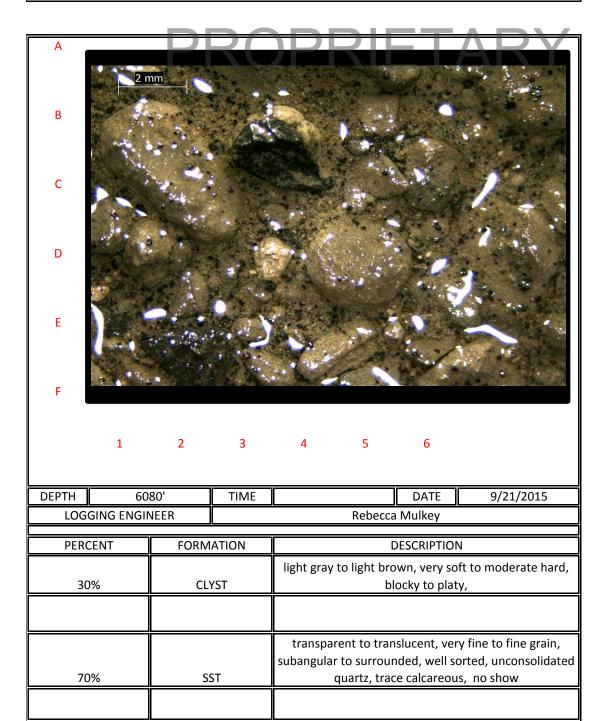
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

Polar Pioneer





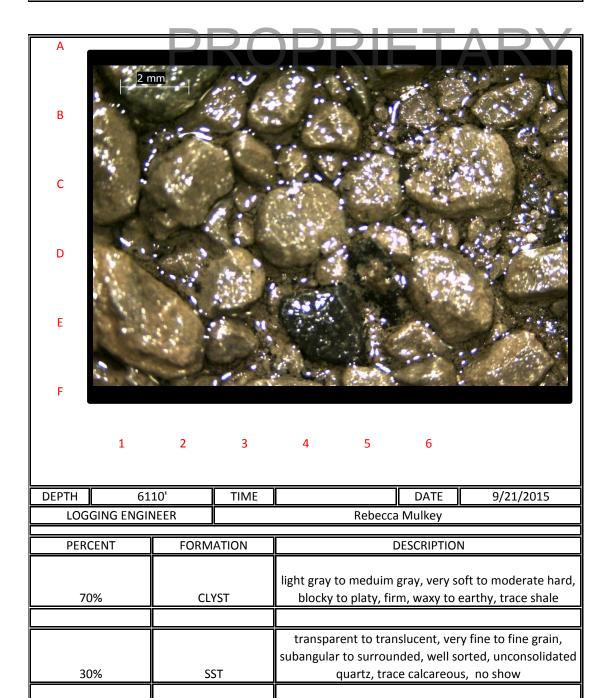
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



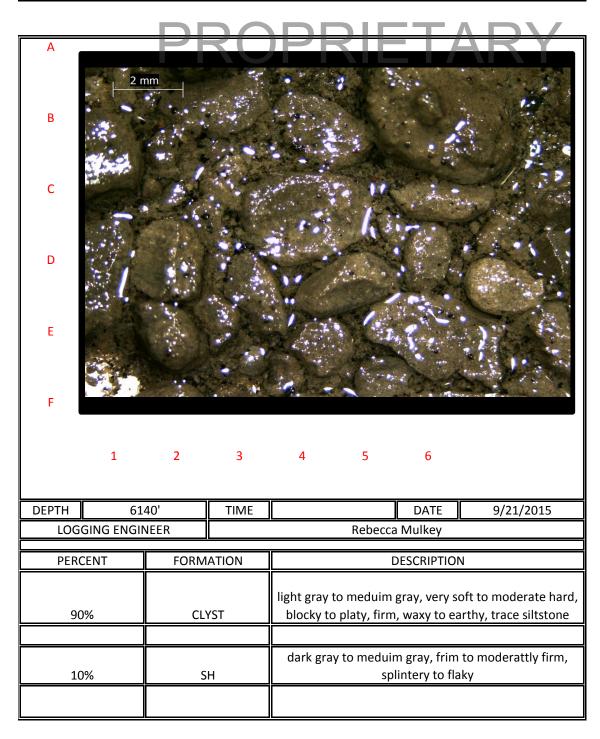
DEPTH 6110'



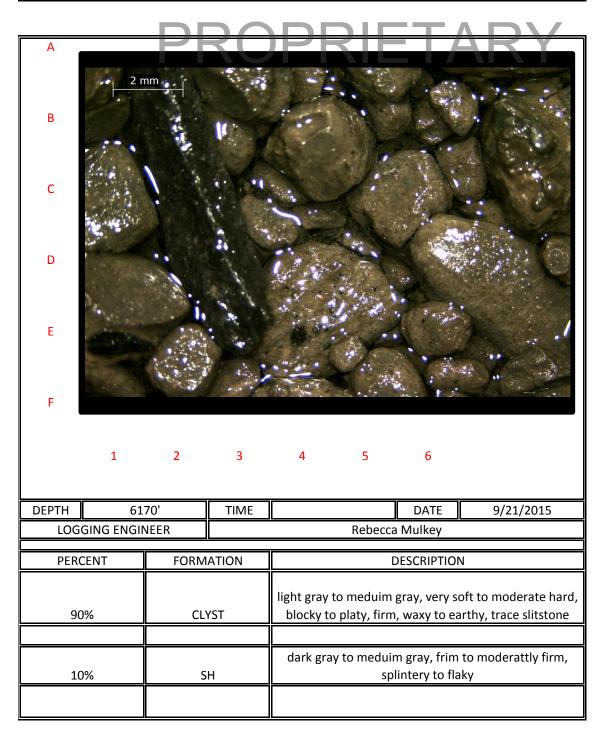
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



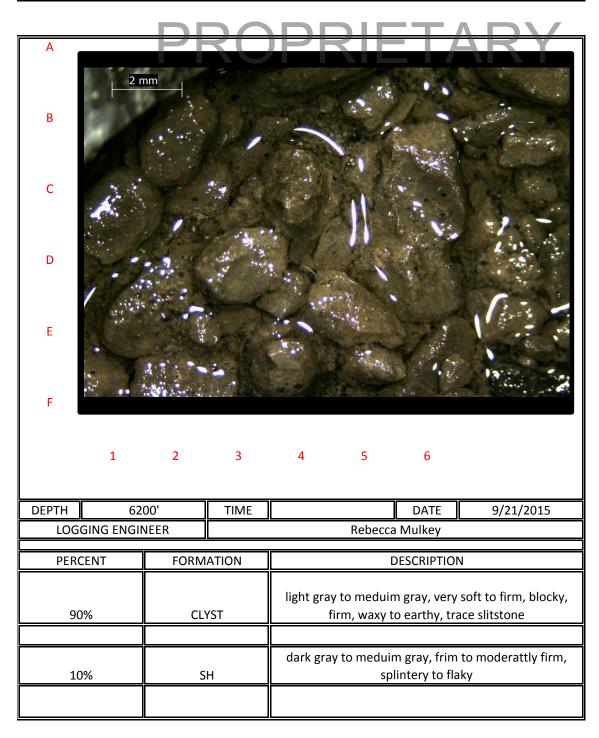
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



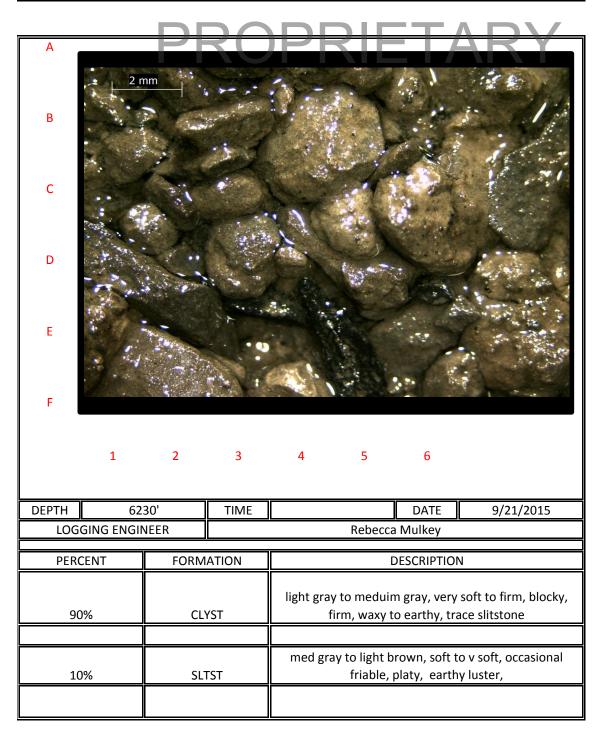
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



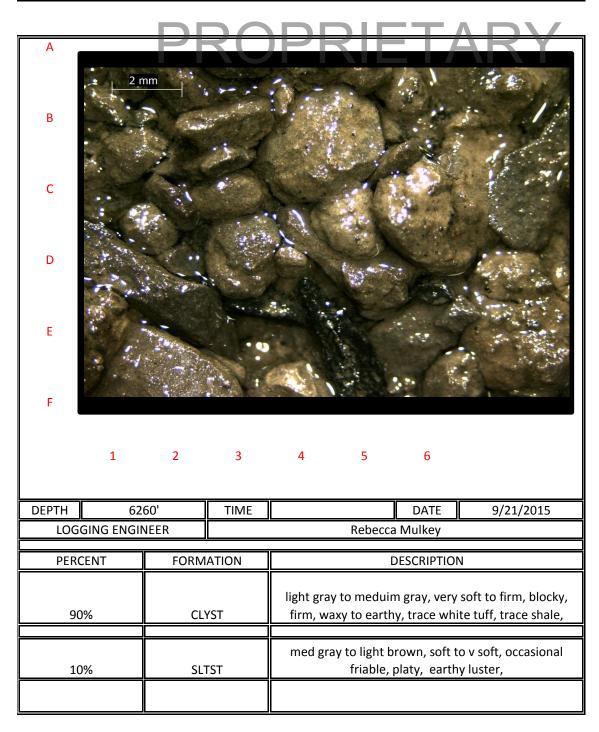
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



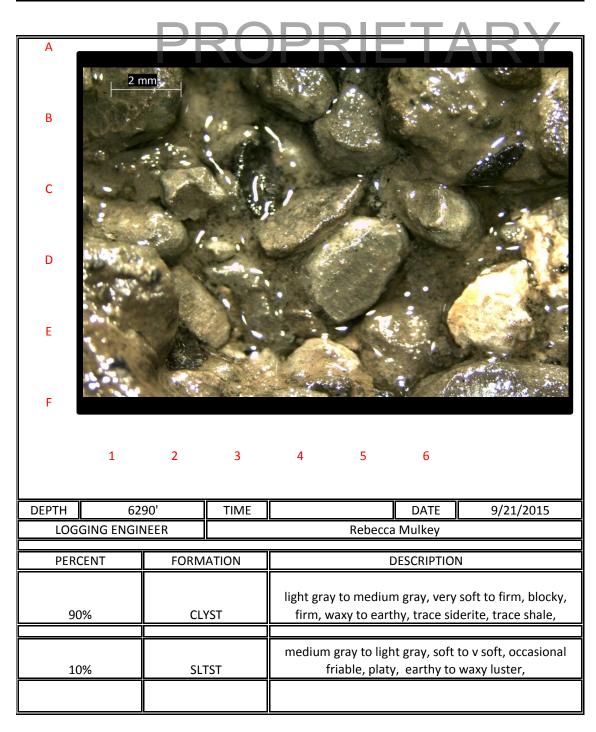
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



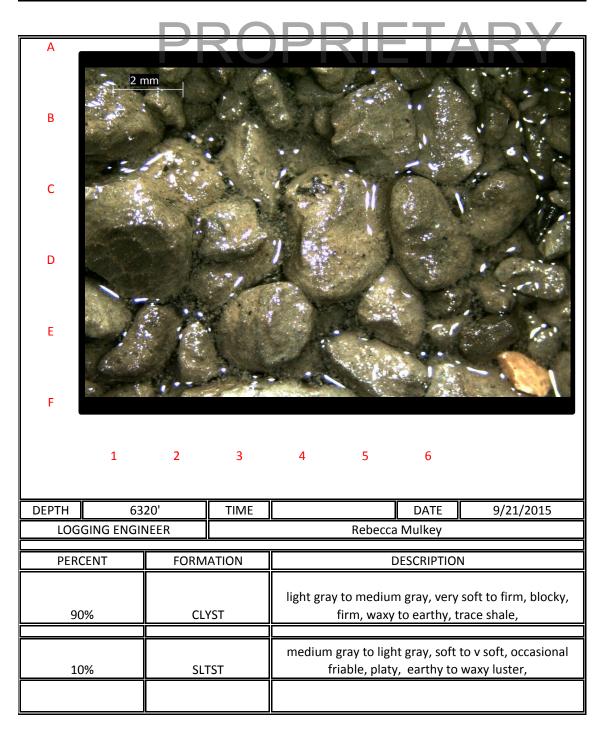
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



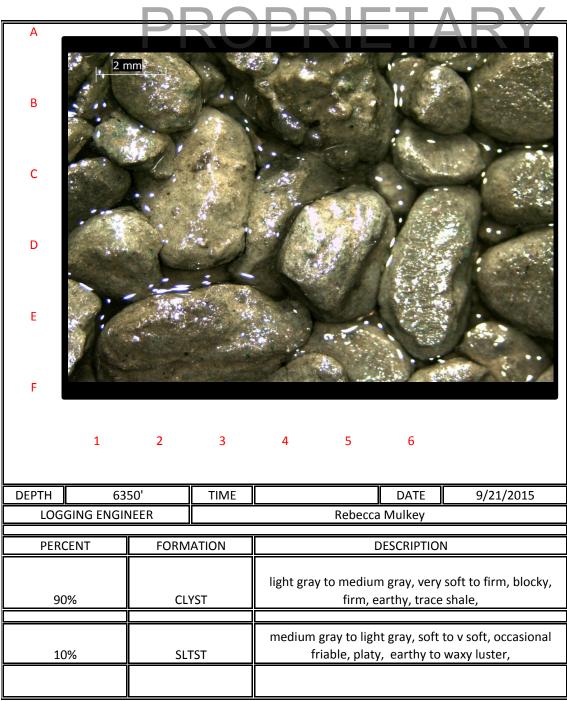
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



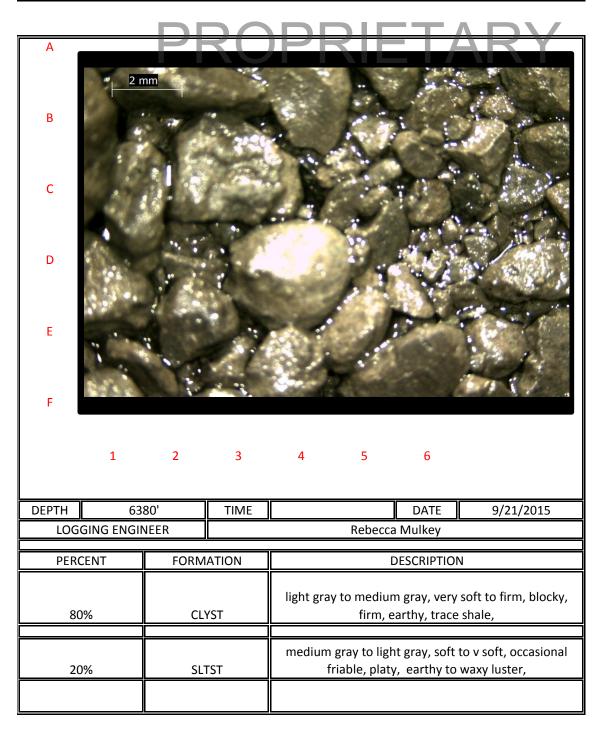
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



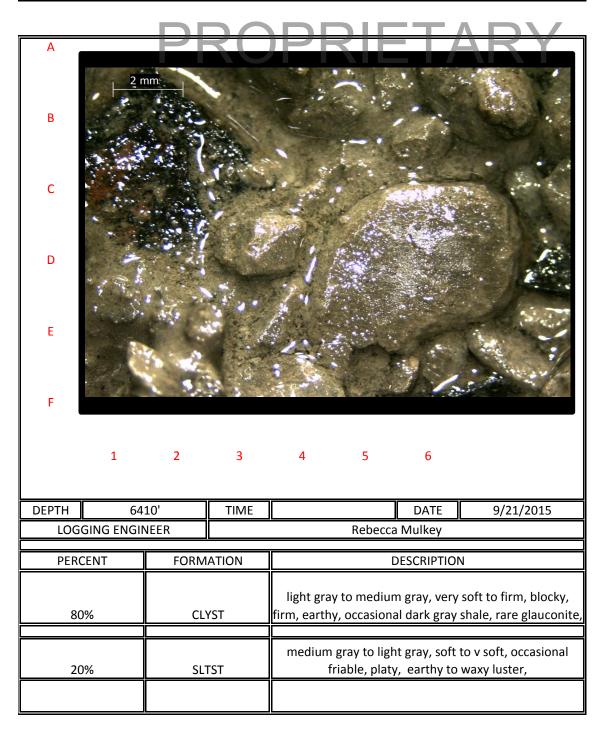
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



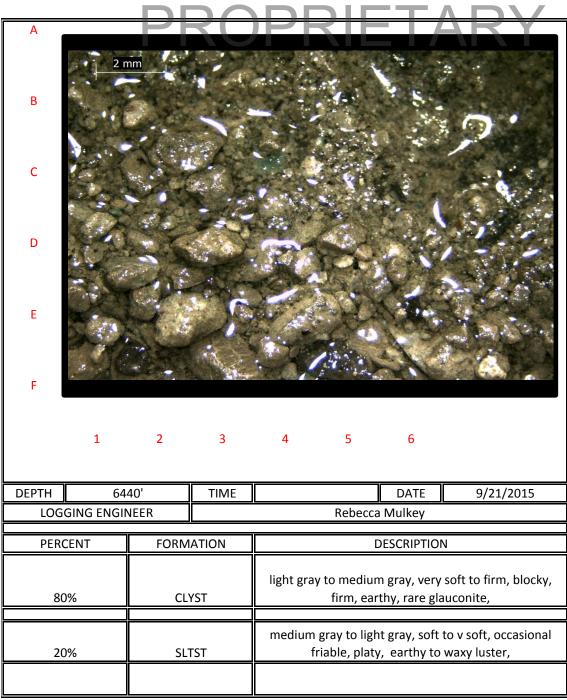
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



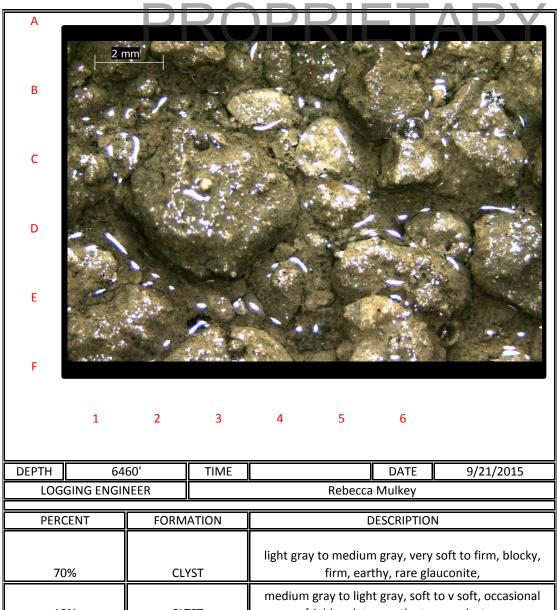
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984





64	6 0'
64	6U [°]

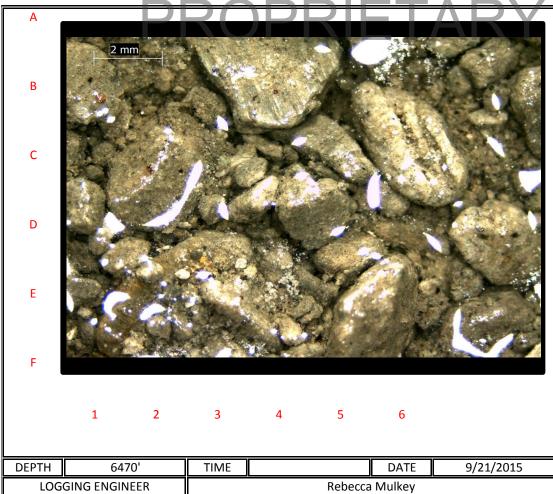
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



10%	SLTST	medium gray to light gray, soft to v soft, occasional friable, platy, earthy to waxy luster,
1070	52151	
		transparent to translucent, very fine to fine grain,
		subangular to surrounded, well sorted, unconsolidated
20%	SST	quartz, no show



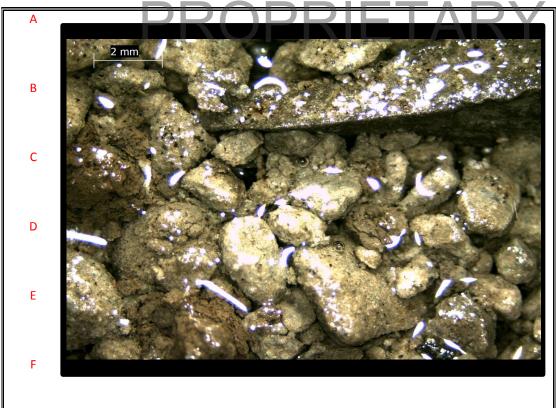
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



LOGGING ENGINEER			Rebecca Mulkey
PERCENT	FORMATION		DESCRIPTION
80%	CLYST		light gray to medium gray, very soft to firm, blocky, firm, earthy, trace glauconite,
10%	SLTST		medium gray to light gray, soft to v soft, occasional friable, platy, earthy to waxy luster,
10%	S	ST	transparent to translucent, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated quartz, no show



COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



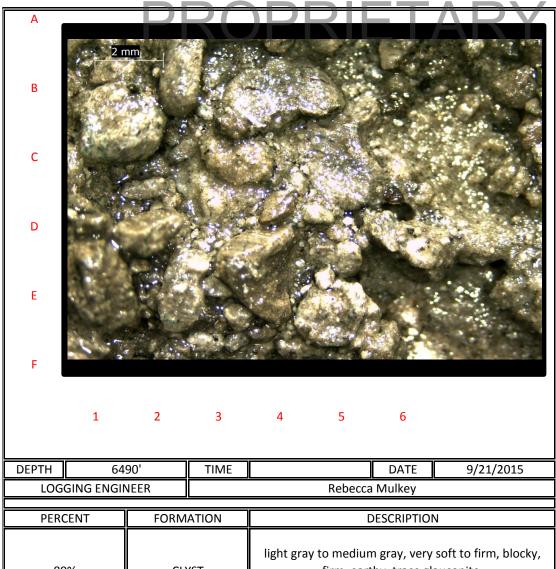
1 2 3 4 5 6

DEPTH	64	180' TIME			DATE	9/21/2015
LOGGING ENGINEER			Rebecca Mulkey			
	PERCENT FORMATION		Г		N	
FERC	LINI	FURIVI	ATION	DESCRIPTION		
80	9%	CLYST			light gray to medium gray, very soft to firm, blocky, firm, earthy, trace glauconite,	
10	9%	SLTST		medium gray to ligh friable, platy	•	to v soft, occasional waxy luster,
10	9%	SST		•		orted, unconsolidated



6490'

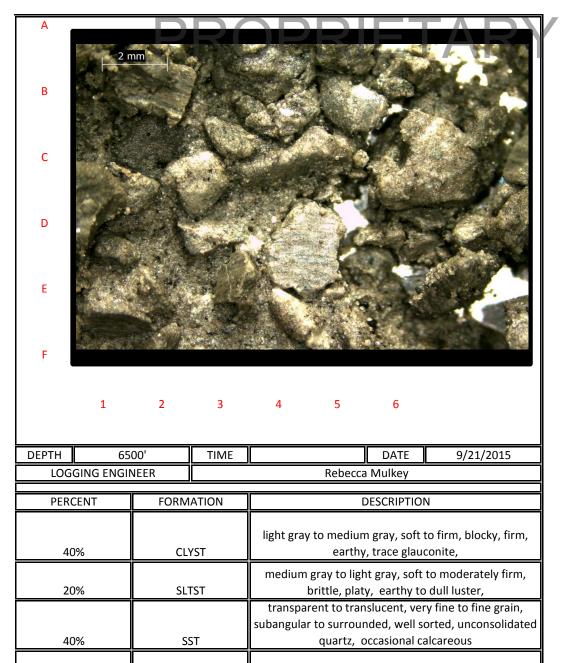
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



		light gray to medium gray, very soft to firm, blocky,
80%	CLYST	firm, earthy, trace glauconite,
		medium gray to light gray, soft to v soft, occasional
10%	SLTST	friable, platy, earthy to waxy luster,
		transparent to translucent, very fine to fine grain,
		transparent to translucent, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated
10%	SST	

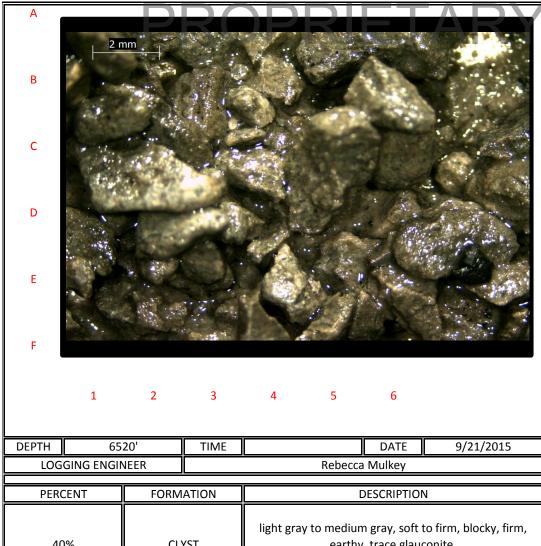
		6500'	
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
	Chukchi Sea	COUNTY / PARISH	Offshore

LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



	dull yellow fluorescence over 40% of the sample, slow
	dull yellow crush cut, dull yellow residual fluorescence.

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



40%	CLYST	light gray to medium gray, soft to firm, blocky, firm, earthy, trace glauconite,
20%	SLTST	medium gray to light gray, soft to moderately firm, brittle, platy, earthy to dull luster,
40%	SST	transparent to translucent, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated quartz, occasional calcareous
		dull yellow fluorescence over 40% of the sample, bright yellow crush cut, dull yellow residual fluorescence.

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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	65	30'	TIME		DATE	9/21/2015
LOG	GING ENGIN	NEER		Rebeco	a Mulkey	d I
DER	CENT	FORM	ATION		DESCRIPTIO	
	0%		rst	light gray to mediu		to firm, blocky, firm,
						to moderately firm,
60	60% SLTST brittle, platy, earthy luster,					
20	transparent to translucent, very fine to fine grain, subangular to surrounded, well sorted, unconsolidate20%SSTquartz, occasional calcareous					orted, unconsolidated
	dull yellow fluorescence, bright yellow crush cut, dull yellow residual fluorescence.					

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UD	: M		
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Polar Pioneer

			6540'		
	COMPANY:	Shell E&F)	RIG NAME:	

WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

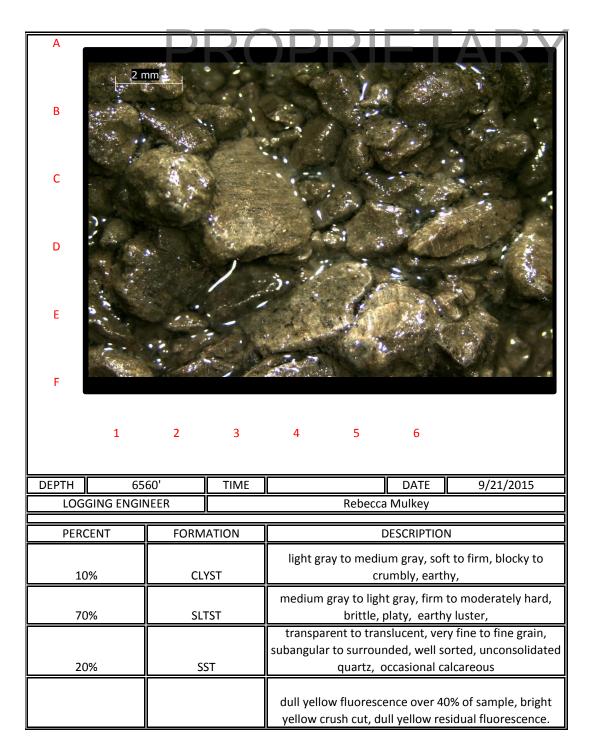
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DEPTH 6	540' T	IME			DATE	9/21/2015
LOGGING ENG	INEER			Rebecca	Mulkey	
PERCENT	FORMATIO	N		D	ESCRIPTION	1
20%	light gray to medium gray, soft to firm, blocky to					
60%	medium gray to light gray, soft to moderately firm,					
20%	Strate Strate transparent to translucent, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated SST quartz, occasional calcareous					
	dull yellow fluorescence, bright yellow crush cut, dull yellow residual fluorescence.					

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

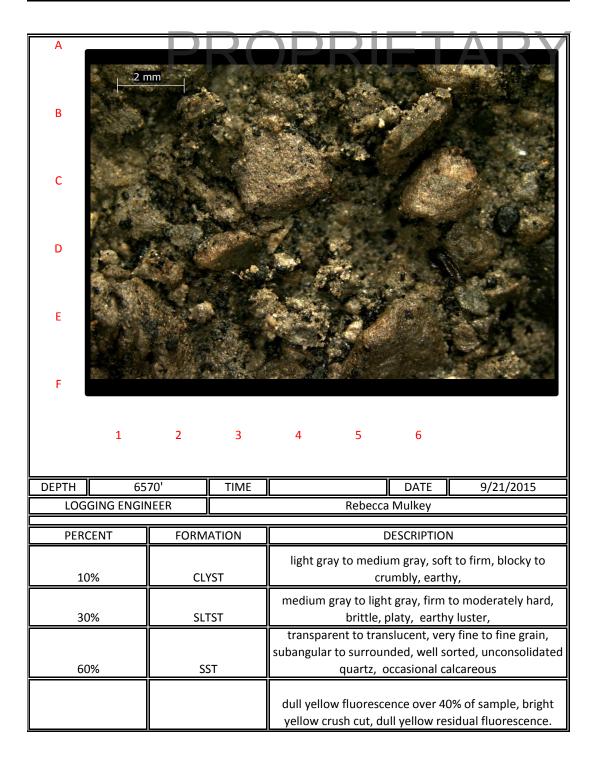
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DEPTH 6	550'	TIME		DATE	9/21/2015
LOGGING ENG	NEER		Rebecca	Mulkey	
PERCENT	FORM	IATION		DESCRIPTIO	N
10%	CLYST		light gray to medium gray, soft to firm, blocky to crumbly, earthy,		
70%	SLTST		medium gray to light gray, soft to moderately firm, brittle, platy, earthy luster,		
20%	SST		transparent to translucent, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated quartz, occasional calcareous		
	dull yellow fluorescence over 40% of sample, bright yellow crush cut, dull yellow residual fluorescence.				

6560'

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

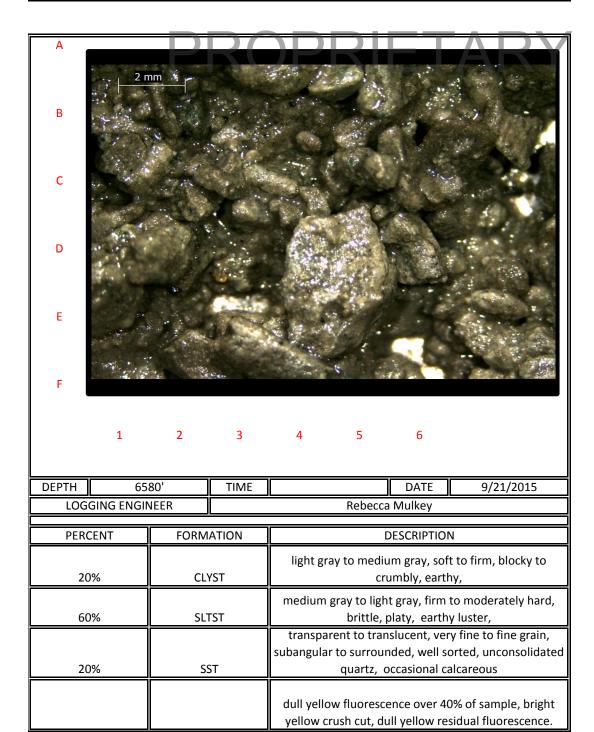


COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

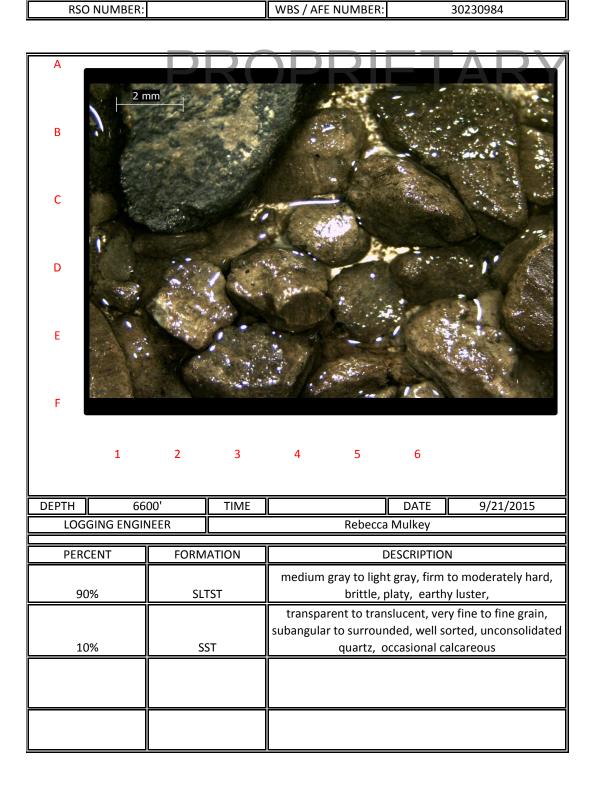




COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



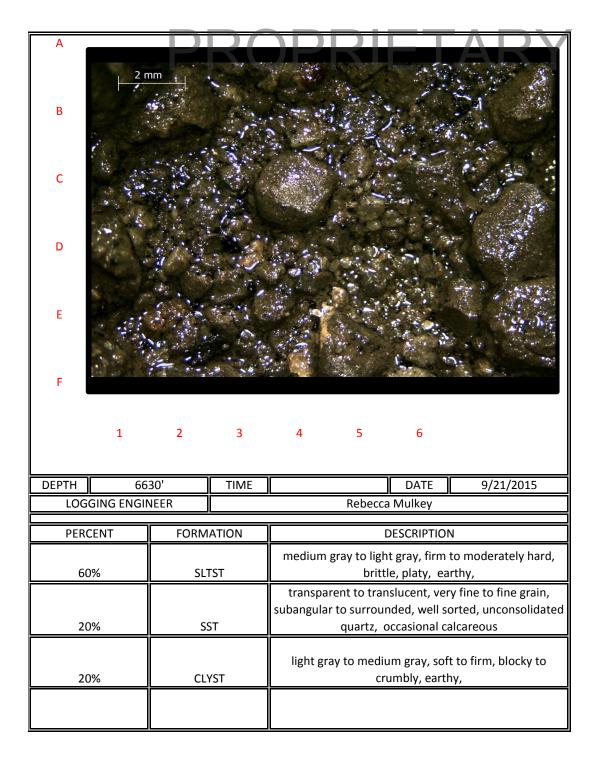
		6600'	
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00



DEPTH	
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6630'

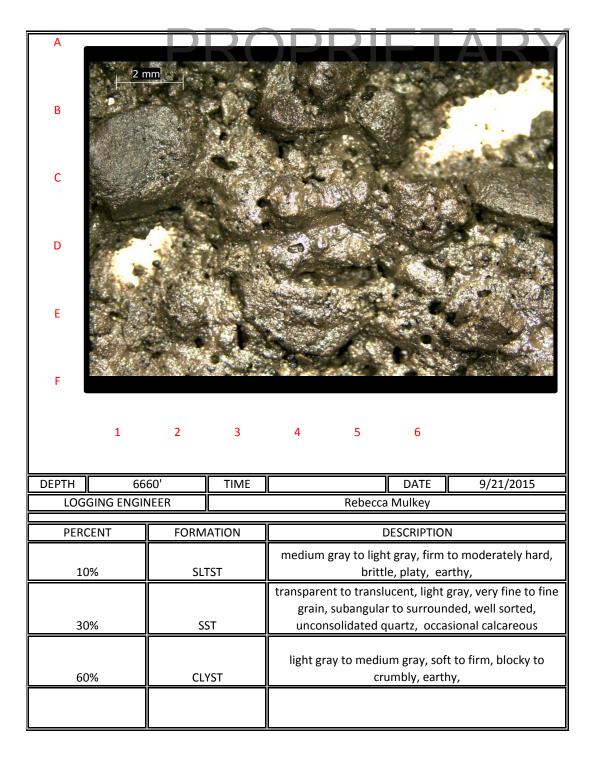
COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



		6660'	
COMPANY:	Shell E&P	RIG NAME:	
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	

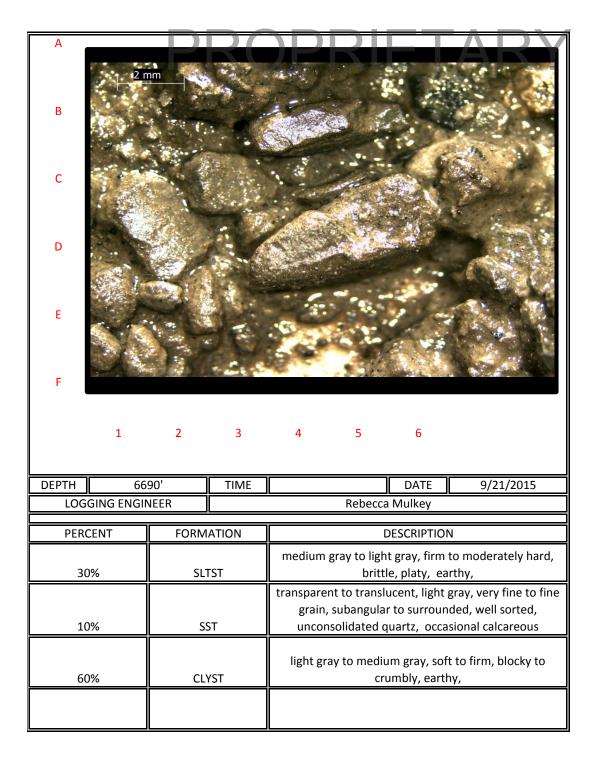
LOCATION: Chukchi Sea COUNTY / PARISH: Offshore	
STATE: Alaska API NUMBER: 55-352-00004-00)
RSO NUMBER: WBS / AFE NUMBER: 30230984	

Polar Pioneer



		6690'
COMPANY:	Shell E&P	R

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984



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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH 67	EPTH 6720' TIME DATE 9/21/20		9/21/2015		
LOGGING ENGI	LOGGING ENGINEER		Rebecca	Mulkey	
PERCENT FORMATION		DESCRIPTION			
50%	SLTST		medium gray to light gray, firm to moderately hard, brittle, platy, earthy,		
10%	SST		transparent to translucent, light gray, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated quartz, occasional calcareous		
40%	CLYST		light gray to medium gray, soft to firm, blocky to crumbly, earthy,		

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COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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	750'	TIME		DATE	9/21/2015
LOGGING ENG	NEER		Rebecca	a Mulkey	
PERCENT	FORM	IATION	DESCRIPTION		
50%	SLTST		medium gray to light gray, firm to moderately hard, brittle, platy, earthy,		
10%	SST		transparent to translucent, light gray, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated quartz, occasional calcareous		nded, well sorted,
40%	CLYST		light gray to medium gray, soft to firm, blocky to crumbly, earthy,		

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<u> </u>	

COMPANY:	Shell E&P	RIG NAME:	Polar Pioneer
WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

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DEPTH	6780'	TIME		DATE	9/21/2015
LOGGING EN	LOGGING ENGINEER			Mulkey	
PERCENT	PERCENT FORMATION		DESCRIPTION		
20%	SLTST		medium gray to light gray, firm to moderately hard, brittle, platy, earthy,		
20%	s	ST	transparent to translucent, light gray, very fine to fine grain, subangular to surrounded, well sorted, unconsolidated quartz, occasional calcareous		nded, well sorted,
60%	60% CLYST			ım gray, sol umbly, eart	ft to firm, blocky to hy,

			6800'	
6				
	COMPANY:	Shell E&P	RIG NAME:	

WELL NAME:	OCS-Y-2321 #001	PROSPECT NAME	Burger J
LOCATION:	Chukchi Sea	COUNTY / PARISH:	Offshore
STATE:	Alaska	API NUMBER:	55-352-00004-00
RSO NUMBER:		WBS / AFE NUMBER:	30230984

Polar Pioneer

